

*JAN*Access DB# 99425SEARCH REQUEST FORM *RECEIVED*Scientific and Technical Information Center *LL 22*

Requester's Full Name: R GITOMER Examiner #: 696 BPC Date: 7/22/03  
 Art Unit: 1651 Phone Number 308-0732 Serial Number: 10/029,184  
 Mail Box and Bldg/Room Location: 11 B61 Results Format Preferred (circle): PAPER DISK E-MAIL  
11 D11

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

*JAN*

For Clerical  
 Searcher \_\_\_\_\_  
 Bibliographic & Technical Library  
 Of The U.S. Patent Office  
 Washington, D.C. 20591-5000

\*\*\*\*\*  
STAFF USE ONLY

Searcher: Jan *4498*  
 Searcher Phone #: \_\_\_\_\_  
 Searcher Location: \_\_\_\_\_  
 Date Searcher Picked Up: 8/6/03  
 Date Completed: 8/14/03  
 Searcher Prep & Review Time: \_\_\_\_\_  
 Clerical Prep Time: 20  
 Online Time: x 40

Type of Search	Vendors and cost where applicable
NA Sequence (#)	STN <input checked="" type="checkbox"/>
AA Sequence (#)	Dialog _____
Structure (#)	Questel/Orbit _____
Bibliographic	Dr.Link _____
Litigation	Lexis/Nexis _____
Fulltext	Sequence Systems _____
Patent Family	WWW/Internet _____
Other	Other (specify) _____

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FILE 'REGISTRY' ENTERED AT 14:00:12 ON 06 AUG 2003  
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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
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Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 5 AUG 2003 HIGHEST RN 561276-83-3  
DICTIONARY FILE UPDATES: 5 AUG 2003 HIGHEST RN 561276-83-3

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP  
PROPERTIES for more information. See STNote 27, Searching Properties  
in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

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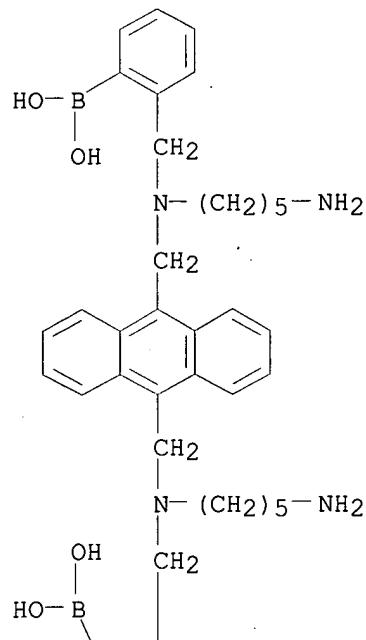
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SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

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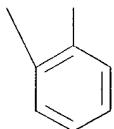
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Jan Delaval  
Reference Librarian  
Biotechnology & Chemical Library  
CM1 1E07 - 703-308-4498  
jan.delaval@uspto.gov

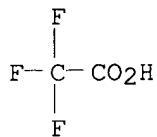
PAGE 1-A



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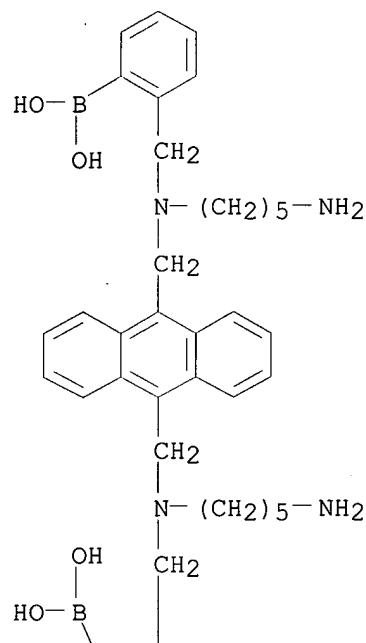
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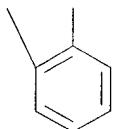
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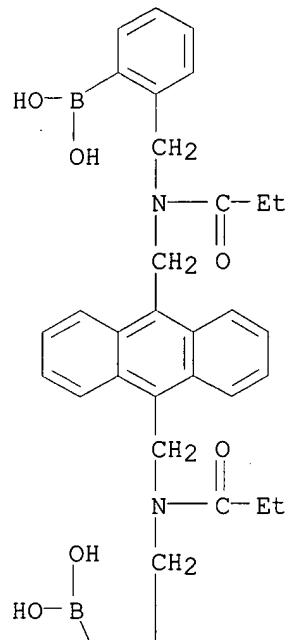
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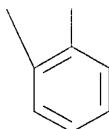
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 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL

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REFERENCE 2: 137:181947

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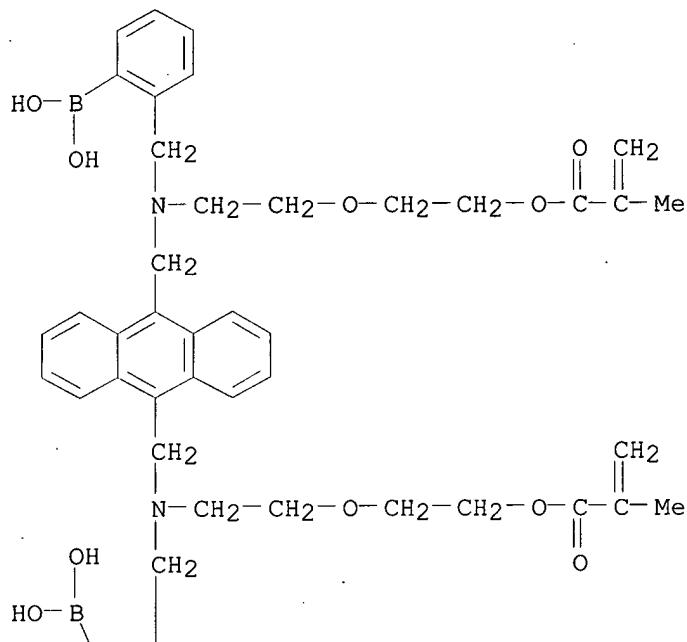
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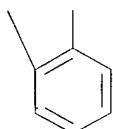
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LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL

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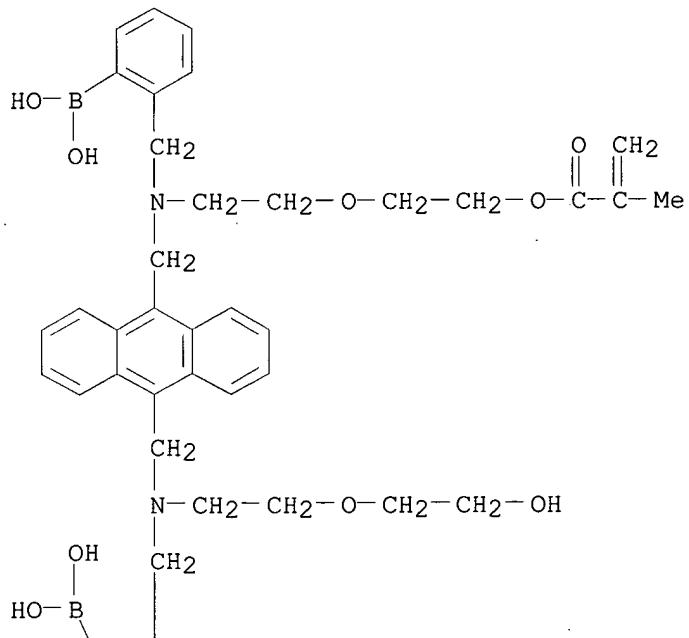
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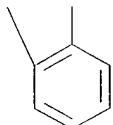
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L30 ANSWER 5 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN  
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 LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL

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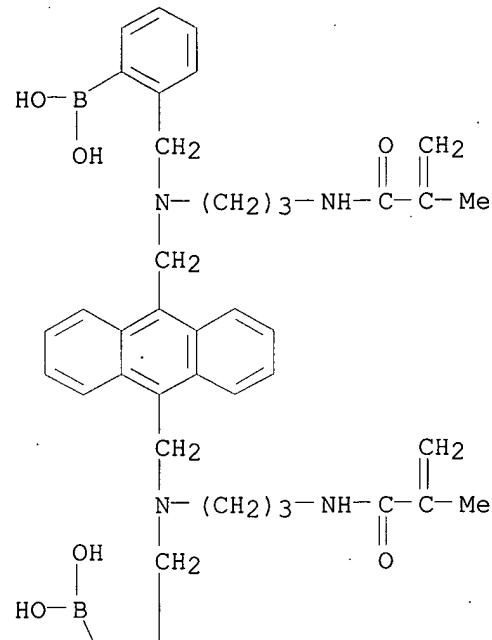
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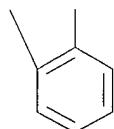
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L30 ANSWER 6 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN  
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 LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL

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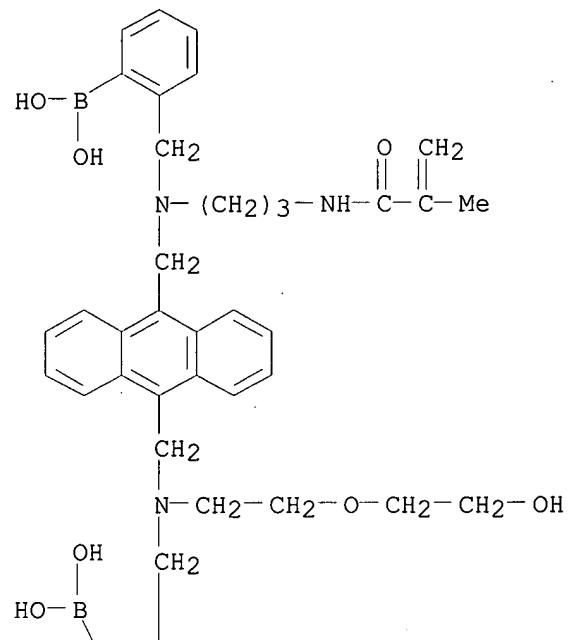
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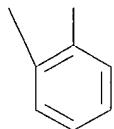
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L30 ANSWER 7 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN  
 RN 408306-38-7 REGISTRY  
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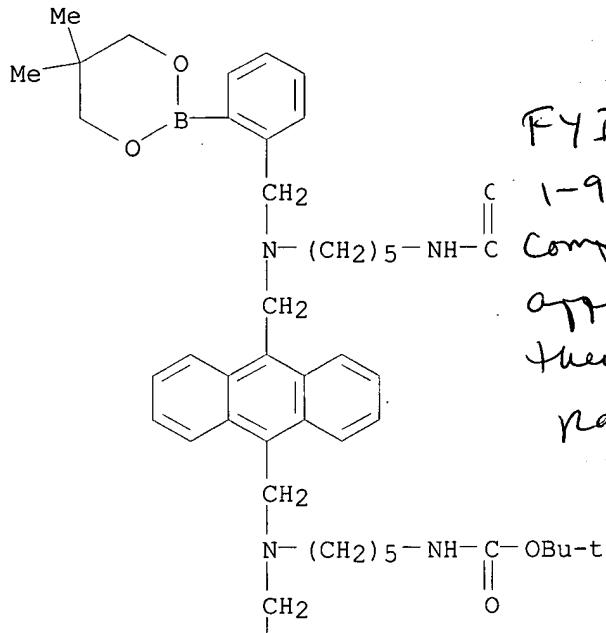
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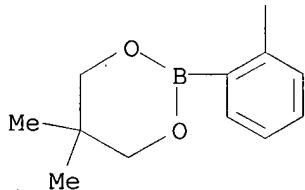
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 RN 443290-71-9 REGISTRY  
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 bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)  
 MF C<sub>60</sub> H<sub>84</sub> B<sub>2</sub> N<sub>4</sub> O<sub>8</sub>  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL

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FYI: These compounds 1-9 are related compounds from applicants' references; they read on claim 2, page 57

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2 REFERENCES IN FILE CA (1947 TO DATE)  
 2 REFERENCES IN FILE CAPLUS (1947 TO DATE)

REFERENCE 1: 137:181947

REFERENCE 2: 137:106086

L39 ANSWER 2 OF 9 REGISTRY COPYRIGHT 2003 ACS on STN

RN 440666-20-6 REGISTRY

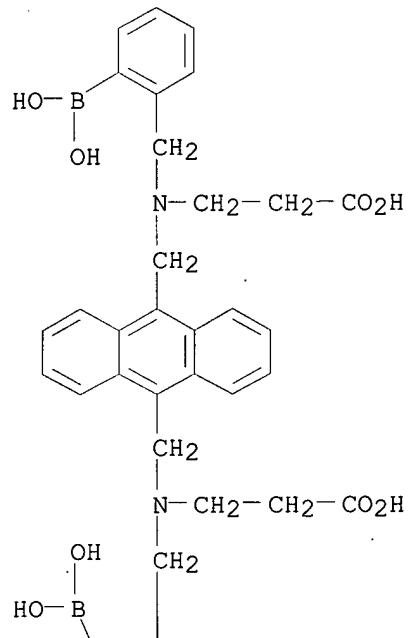
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MF C36 H38 B2 N2 O8

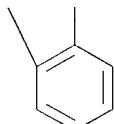
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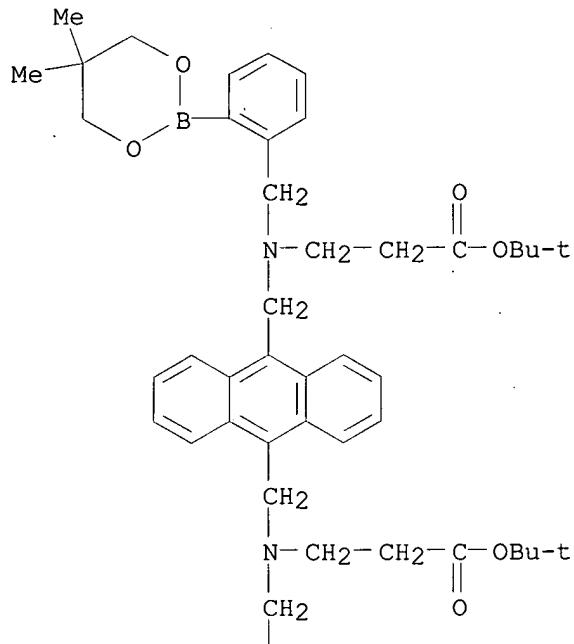
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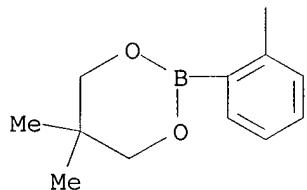
REFERENCE 1: 137:75531

L39 ANSWER 3 OF 9 REGISTRY COPYRIGHT 2003 ACS on STN  
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 MF C54 H70 B2 N2 O8  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL

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REFERENCE 2: 137:181947

REFERENCE 3: 137:106086

REFERENCE 4: 137:90594

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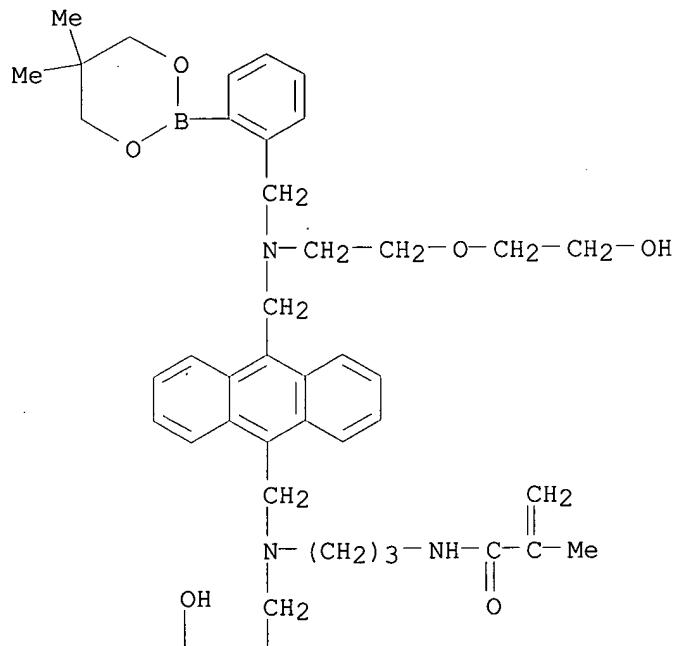
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MF C46 H57 B2 N3 O7

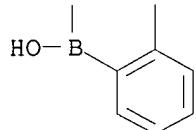
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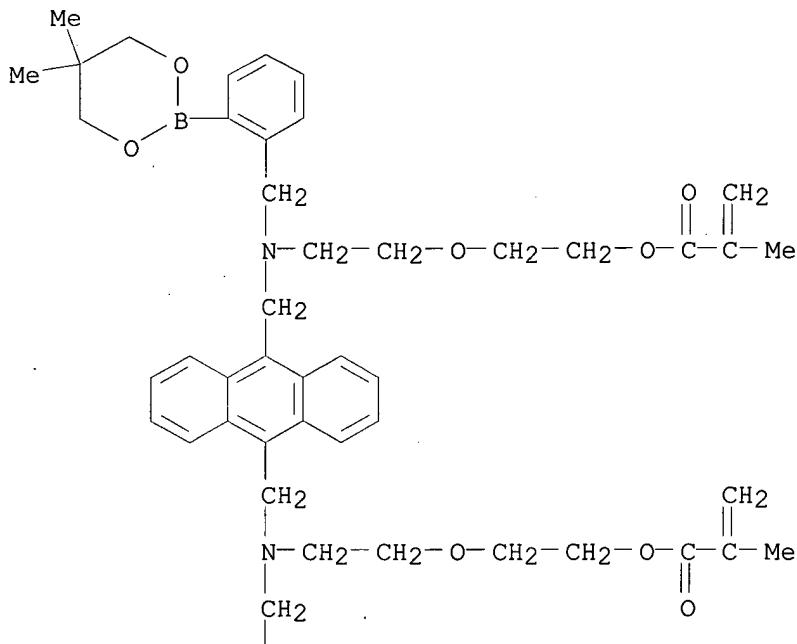


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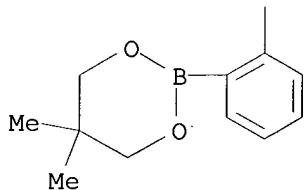
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 MF C56 H70 B2 N2 O10  
 CI COM  
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 LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL

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REFERENCE 1: 137:181947

REFERENCE 2: 137:106086

REFERENCE 3: 136:291357

REFERENCE 4: 136:184293

L39 ANSWER 6 OF 9 REGISTRY COPYRIGHT 2003 ACS on STN

RN 399032-67-8 REGISTRY

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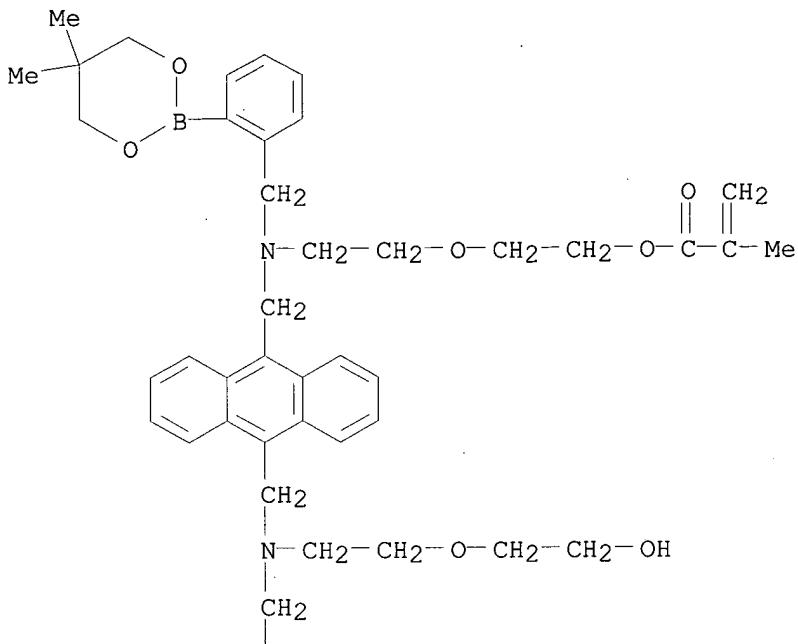
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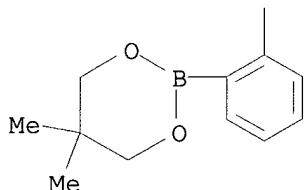
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REFERENCE 6: 136:184293

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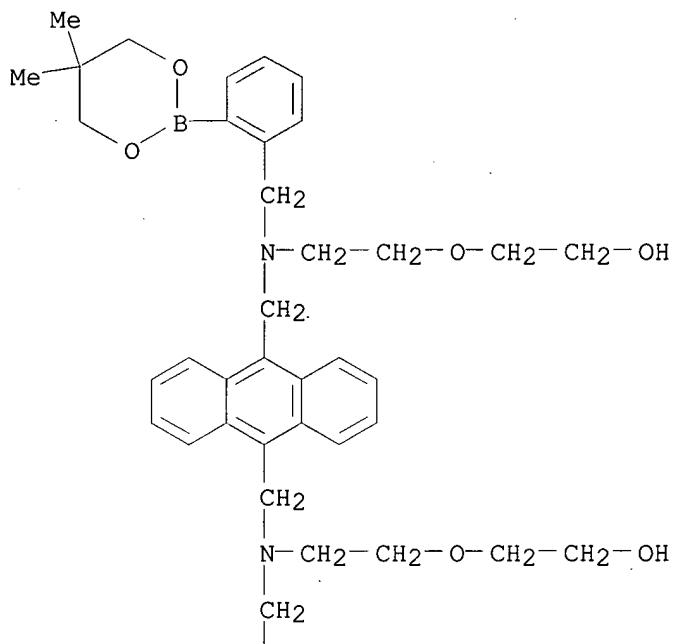
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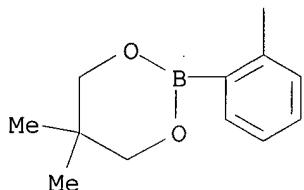
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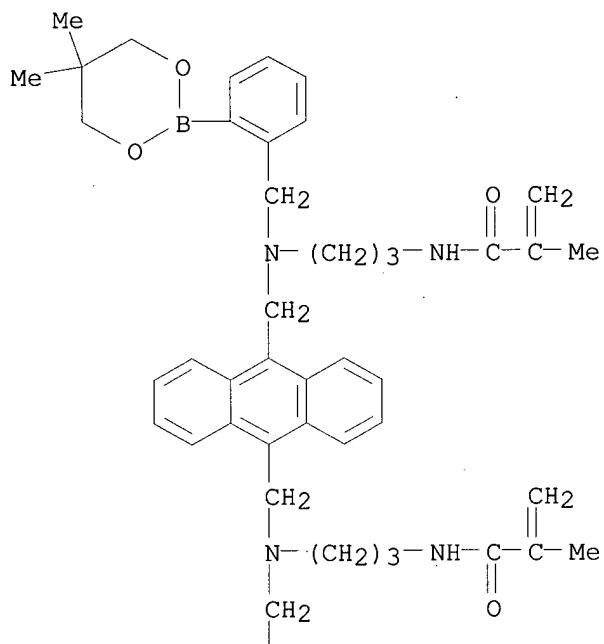
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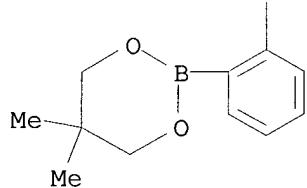
CN 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]]bis[2-methyl-(9CI) (CA INDEX NAME)

MF C54 H68 B2 N4 O6  
CI COM  
SR CA  
LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL

PAGE 1-A



PAGE 2-A



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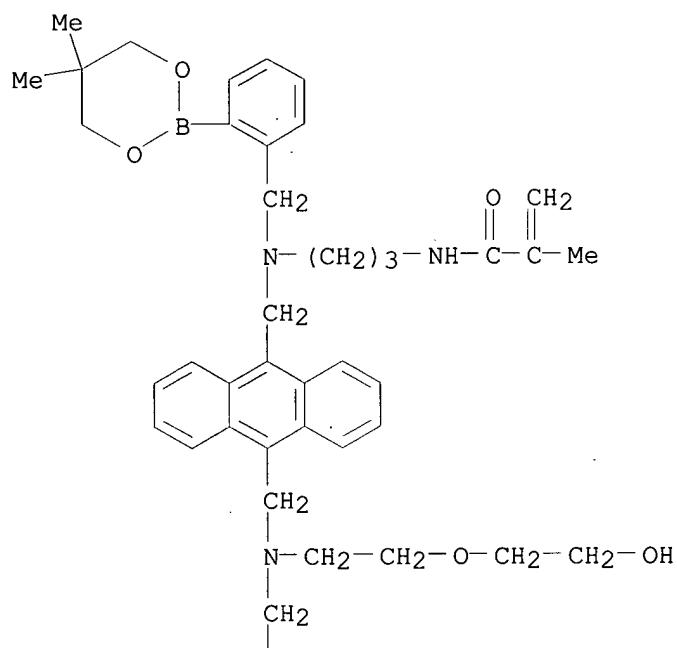
CN 2-Propenamide, N-[3-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracyl]methyl]amino]propyl]-2-methyl- (9CI) (CA INDEX NAME)

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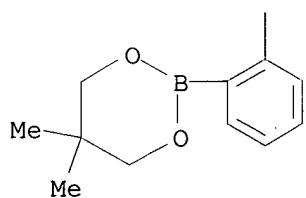
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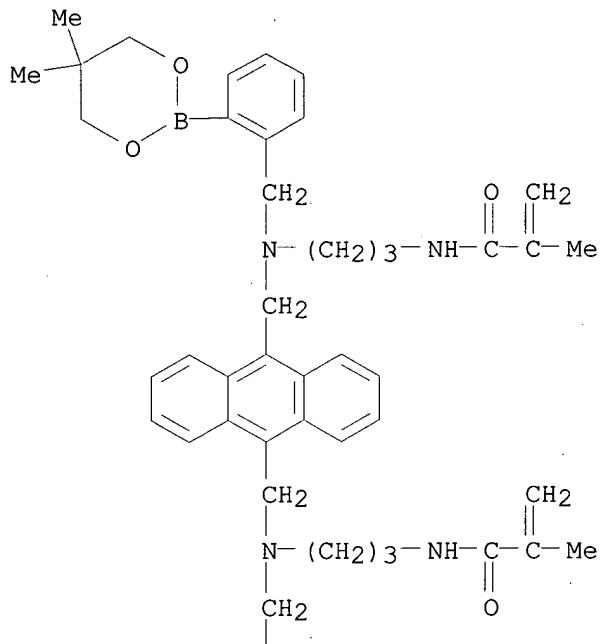
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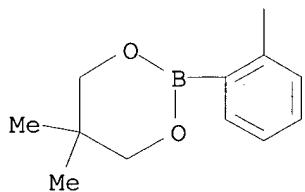
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PAGE 2-A



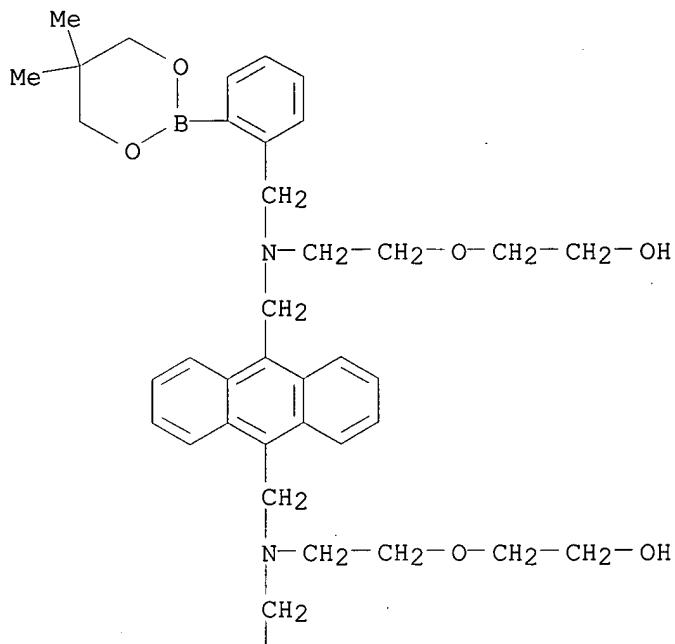
IT 399032-66-7P 399032-67-8P

(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

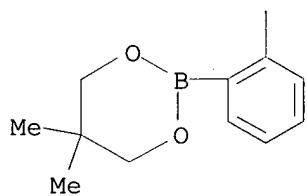
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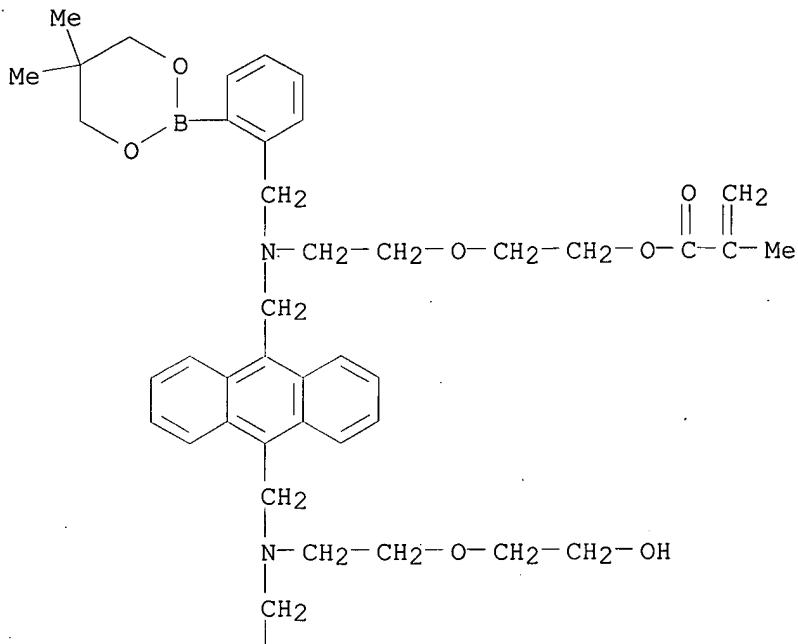
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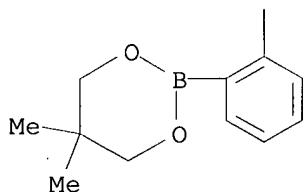
RN 399032-67-8 USPATFULL

CN 2-Propenoic acid, 2-methyl-, 2-[2-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



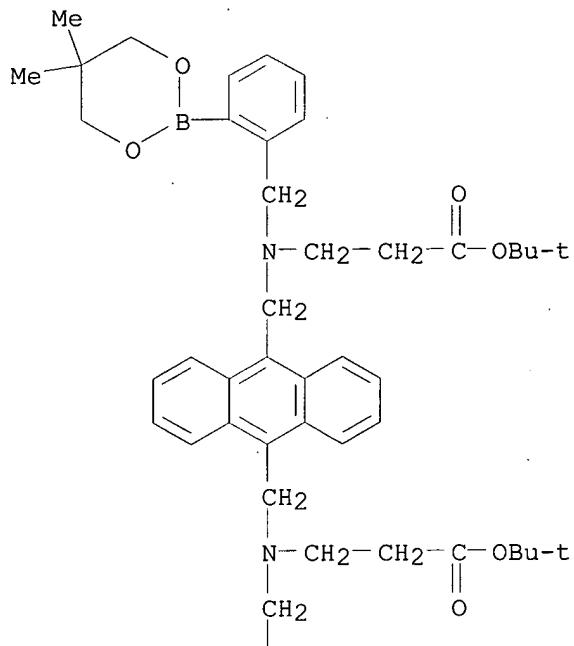
IT 440666-19-3P 441011-77-4P

(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

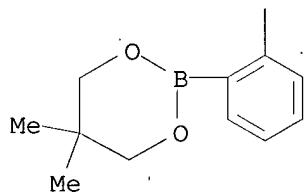
RN 440666-19-3 USPATFULL

CN .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis[N-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



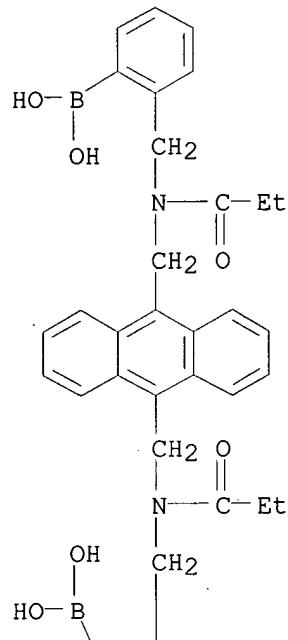
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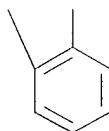
RN 441011-77-4 USPATFULL

CN Boronic acid, [9,10-anthracenediylbis[methylene[(1-oxopropyl)imino]methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



L48 ANSWER 2 OF 2 USPATFULL on STN  
 AN 2002:235437 USPATFULL  
 TI Detection of glucose in solutions also containing an alpha-hydroxy acid  
 or a beta-diketone  
 IN **Daniloff, George Y.**, Mountain View, CA, UNITED STATES  
     **Kalivretenos, Aristotle G.**, Columbia, MD, UNITED STATES  
     **Nikolaitchik, Alexandre V.**, Damascus, MD, UNITED STATES  
 PA **Sensors for Medicine and Science, Inc.**, Germantown, MD (U.S.  
 corporation)  
 PI US 2002127626 A1 20020912  
 AI US 2001-29184 A1 20011228 (10)  
 RLI Continuation-in-part of Ser. No. US 2001-754217, filed on 5 Jan 2001,  
 PENDING  
 PRAI US 2001-329746P 20011018 (60)  
     US 2001-269887P 20010221 (60) <--  
 DT Utility  
 FS APPLICATION  
 LREP ROTHWELL, FIGG, ERNST & MANBECK, P.C., 1425 K STREET, N.W., SUITE 800,  
 WASHINGTON, DC, 20005  
 CLMN Number of Claims: 34  
 ECL Exemplary Claim: 1  
 DRWN 13 Drawing Page(s)  
 LN.CNT 1619

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Compositions and methods for determining the presence or concentration of glucose in a sample which may also contain an alpha-hydroxy acid or a beta-diketone. The method uses a compound having at least two recognition elements for glucose, oriented such that the interaction between the compound and glucose is more stable than the interaction between the compound and the alpha-hydroxy acid or beta-diketone, such that the presence of the alpha-hydroxy acid or the beta-diketone does not substantially interfere with said determination.

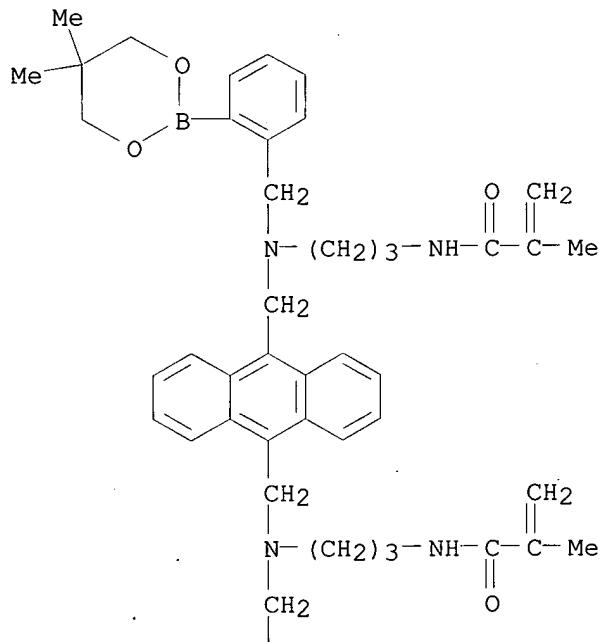
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 399032-64-5P, 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]bis[2-methyl-(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)]

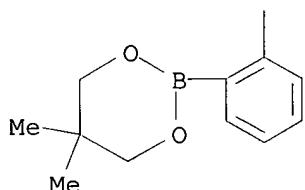
RN 399032-64-5 USPATFULL

CN 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]bis[2-methyl- (9CI) (CA INDEX NAME)]

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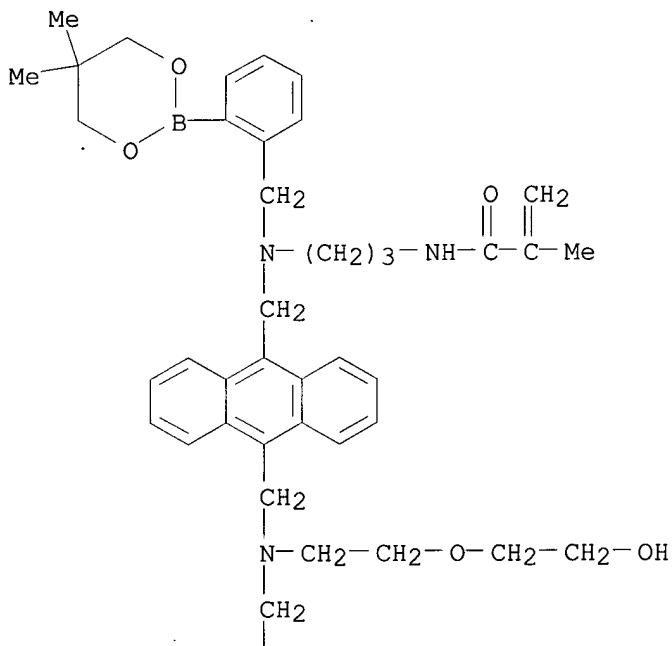
IT 399032-62-3P, 2-Propenamide, N-[3-[[2-(5,5-dimethyl-1,3,2-

dioxaborinan-2-yl)phenyl]methyl] [[10-[[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]propyl]-2-methyl- **399032-69-0P**,  
 2-Propenoic acid, 2-methyl-, 9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl-  
 2,1-ethanediyl] ester **443290-73-1P**, Boronic acid,  
 [9,10-anthracenediylbis[methylene[(5-aminopentyl)imino]methylene-2,1-phenylene]]bis-, bis(trifluoroacetate)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

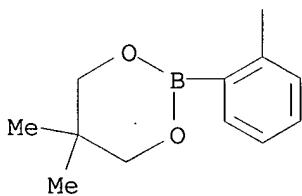
RN 399032-62-3 USPATFULL

CN 2-Propenamide, N-[3-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]propyl]-2-methyl- (9CI) (CA INDEX NAME)

PAGE 1-A



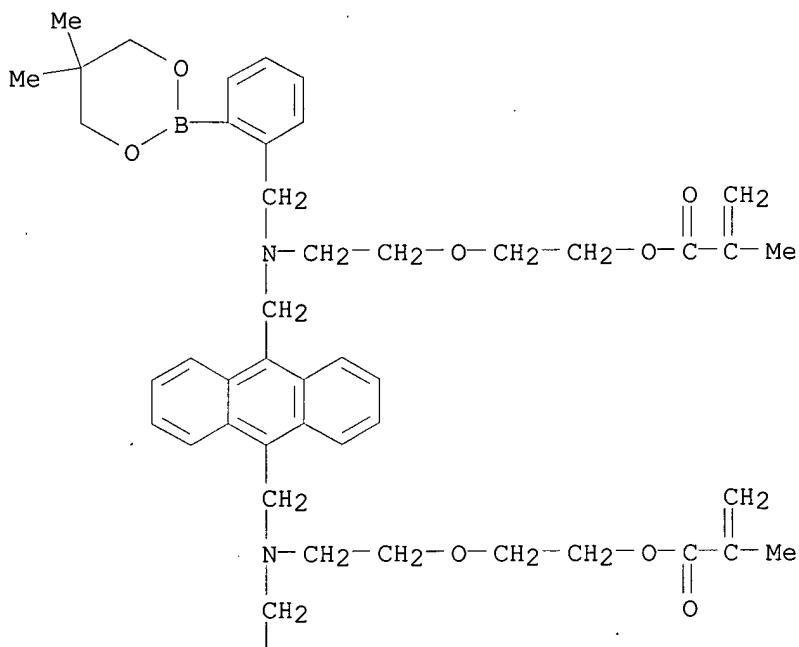
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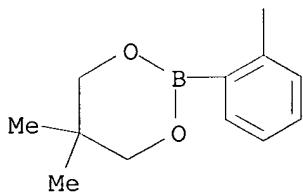
RN 399032-69-0 USPATFULL

CN 2-Propenoic acid, 2-methyl-, 9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl-  
 2,1-ethanediyl] ester (9CI) (CA INDEX NAME)

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RN 443290-73-1 USPATFULL

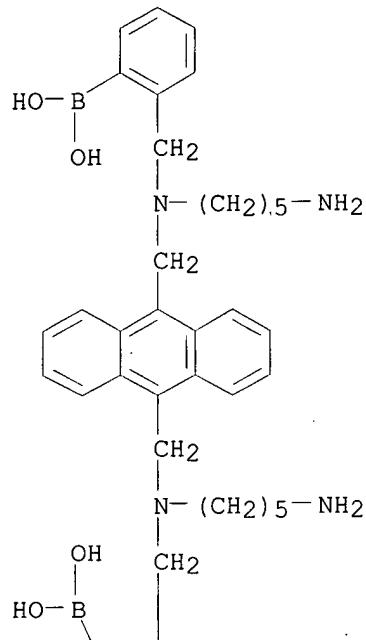
CN Boronic acid, [9,10-anthracenediylbis[methylene[(5-aminopentyl)imino]methylene-2,1-phenylene]]bis-, bis(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

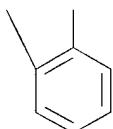
CRN 443290-72-0

CMF C40 H52 B2 N4 O4

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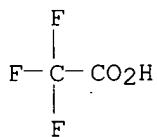


PAGE 2-A



CM 2

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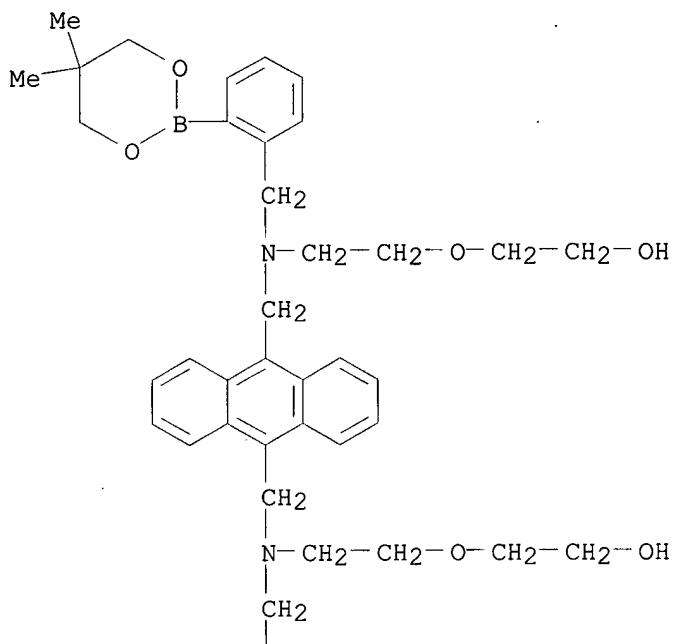


IT 399032-66-7P, Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyoxy]]bis- 399032-67-8P 443290-71-9P, Carbamic acid, [9,10-anthracenediylbis[methylene[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-5,1-pentanediyl]]bis-, bis(1,1-dimethylethyl) ester  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

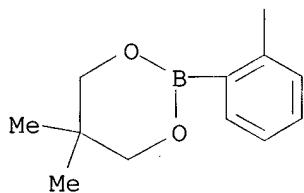
RN 399032-66-7 USPATFULL  
 CN Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[[2-(5,5-dimethyl-1,3,2-

dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]bis- (9CI)  
(CA INDEX NAME)

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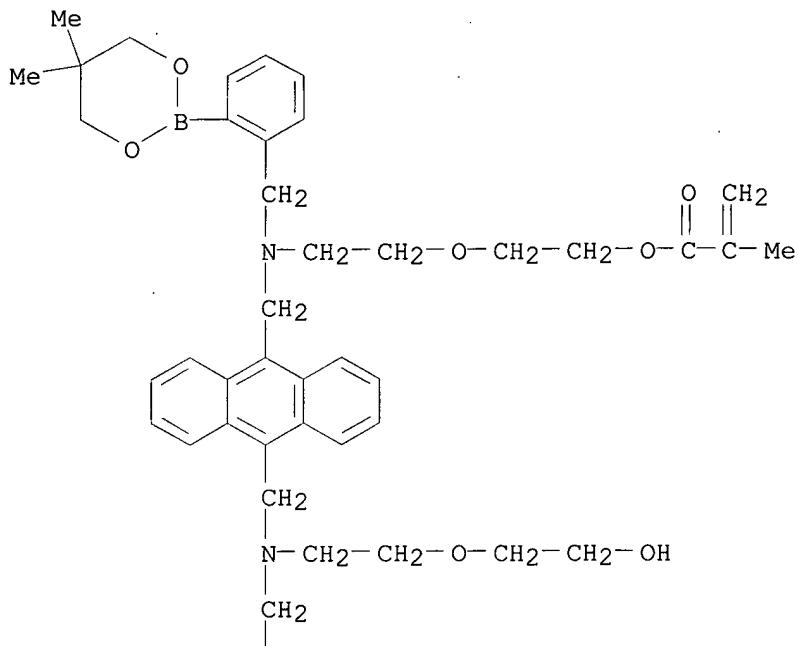


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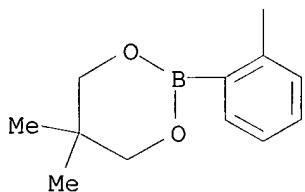


RN 399032-67-8 USPATFULL  
 CN 2-Propenoic acid, 2-methyl-, 2-[2-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



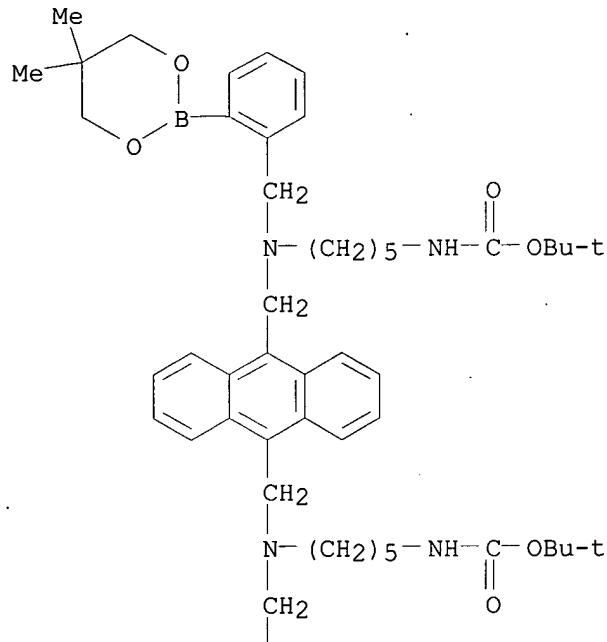
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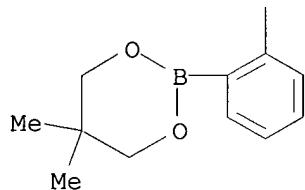
RN 443290-71-9 USPATFULL

CN Carbamic acid, [9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-5,1-pentanediyli]]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

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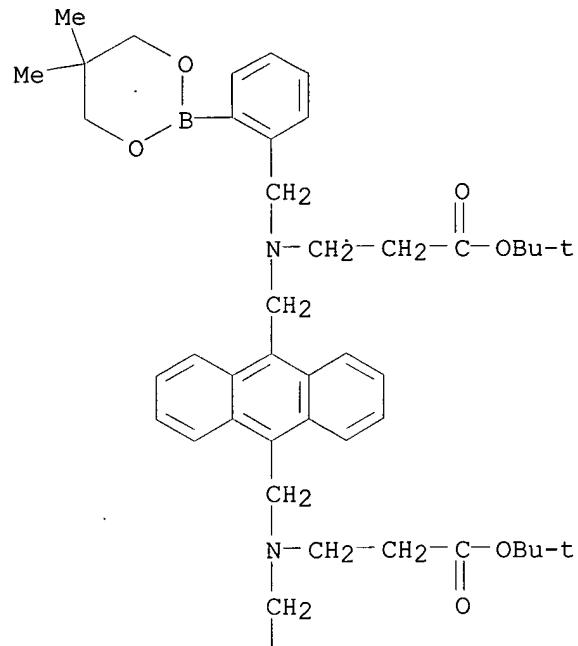
IT 440666-19-3P, .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis[N-[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-, bis(1,1-dimethylethyl) ester 441011-77-4P, Boronic acid, [9,10-anthracenediylbis[methylene[(1-oxopropyl)imino]methylene-2,1-phenylene]]bis-

(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

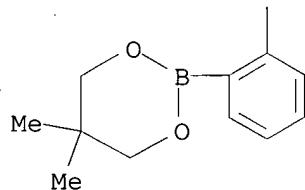
RN 440666-19-3 USPATFULL

CN .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis[N-[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

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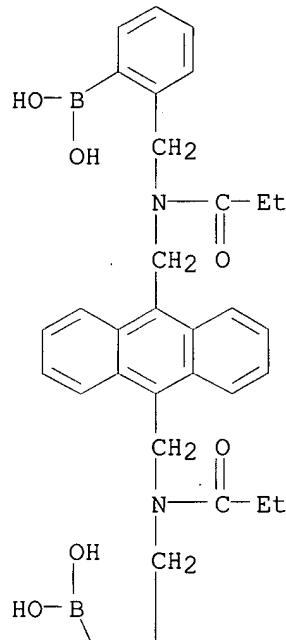
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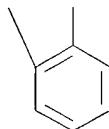
RN 441011-77-4 USPATFULL

CN Boronic acid, [9,10-anthracenediylbis[methylene[(1-oxopropyl)imino]methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



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=> d 149 bib abs hitstr tot

L49 ANSWER 1 OF 7 USPATFULL on STN  
 AN 2003:17452 USPATFULL  
 TI Detection of analytes in aqueous environments  
 IN Colvin, Arthur E., JR., Mt. Airy, MD, UNITED STATES  
 PI US 2003013204 A1 20030116  
 AI US 2002-193245 A1 20020712 (10)  
 RLI Division of Ser. No. US 2000-632624, filed on 4 Aug 2000, PENDING  
 DT Utility  
 FS APPLICATION  
 LREP ROTHWELL, FIGG, ERNST & MANBECK, P.C., 1425 K STREET, N.W., SUITE 800,  
 WASHINGTON, DC, 20005  
 CLMN Number of Claims: 11  
 ECL Exemplary Claim: 1  
 DRWN 2 Drawing Page(s)  
 LN.CNT 596  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to indicator molecules for detecting the presence or concentration of an analyte in a medium, such as a liquid, and to methods for achieving such detection. More particularly, the invention relates to copolymer macromolecules containing relatively hydrophobic

indicator component monomers, and hydrophilic monomers, such that the macromolecule is capable of use in an aqueous environment.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

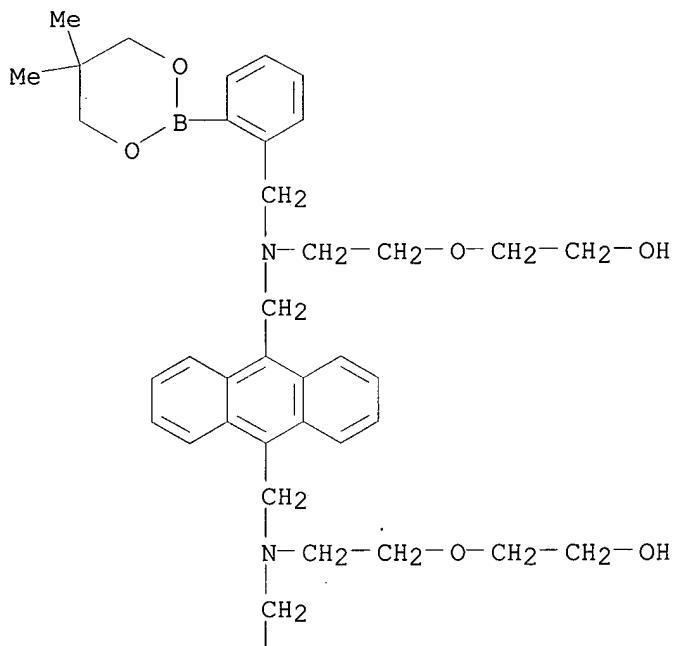
IT 399032-66-7P

(intermediate; fluorescent monomers and polymers for detection of analytes in aq. environments)

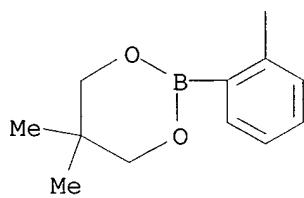
RN 399032-66-7 USPATFULL

CN Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]bis- (9CI) (CA INDEX NAME)

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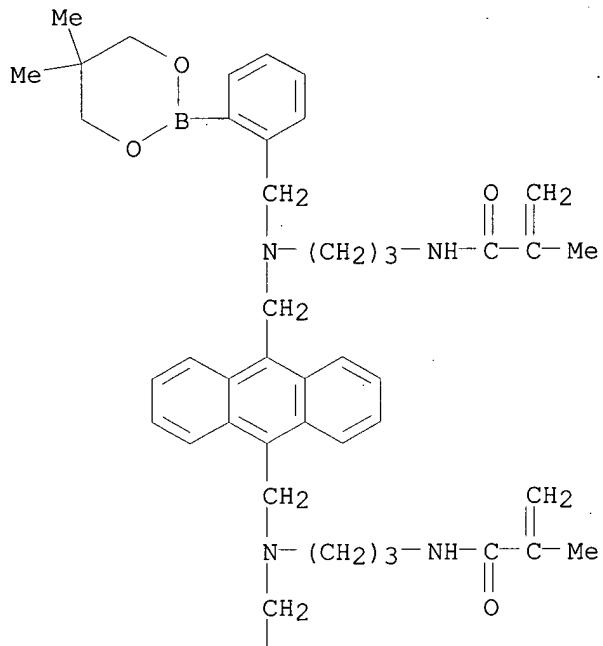
IT 399032-64-5P 399032-67-8P 399032-69-0P

(prep. and polymn.; fluorescent monomers and polymers for detection of analytes in aq. environments)

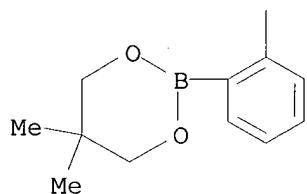
RN 399032-64-5 USPATFULL

CN 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]bis[2-methyl- (9CI) (CA INDEX NAME)

PAGE 1-A

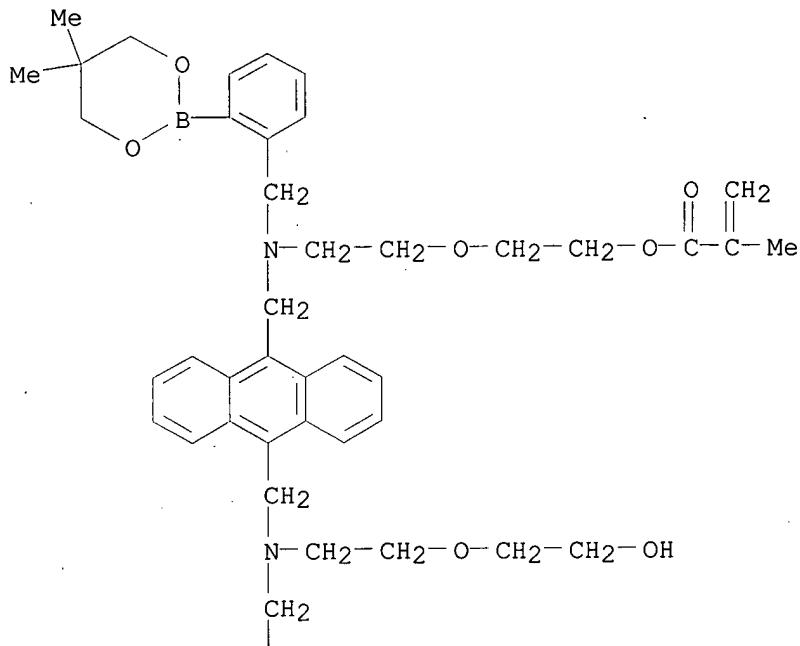


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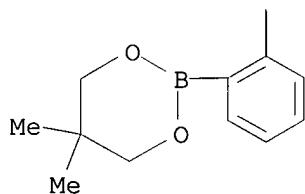


RN 399032-67-8 USPATFULL  
 CN 2-Propenoic acid, 2-methyl-, 2-[2-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



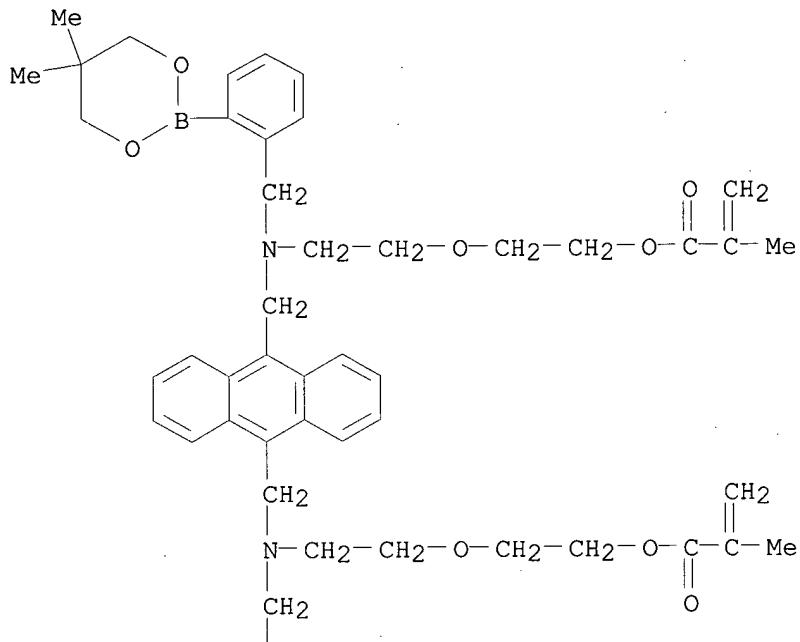
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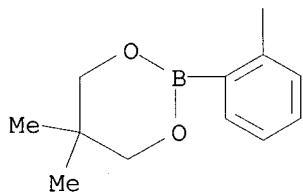
RN 399032-69-0 USPATFULL

CN 2-Propenoic acid, 2-methyl-, 9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl ester (9CI) (CA INDEX NAME)

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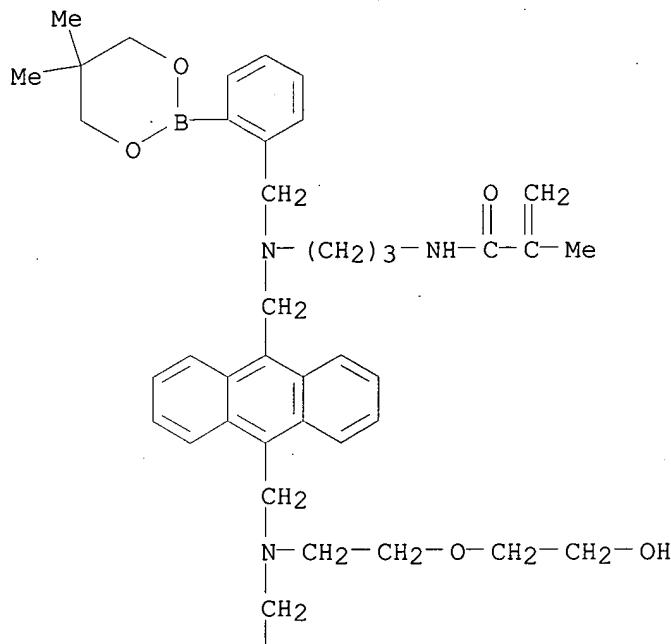
IT 399032-62-3

(prep. and polymn.; fluorescent monomers and polymers for detection of analytes in aq. environments)

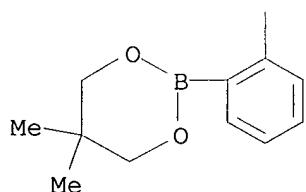
RN 399032-62-3 USPATFULL

CN 2-Propenamide, N-[3-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxyethyl]amino]methyl]-9-anthracenyl]methyl]amino]propyl]-2-methyl- (9CI) (CA INDEX NAME)

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L49 ANSWER 2 OF 7 USPATFULL on STN

AN 2003:17450 USPATFULL

TI Detection of analytes in aqueous environments

IN Colvin, Arthur E., JR., Mt. Airy, MD, UNITED STATES

PI US 2003013202 A1 20030116

AI US 2002-193249 A1 20020712 (10)

RLI Division of Ser. No. US 2000-632624, filed on 4 Aug 2000, PENDING

DT Utility

FS APPLICATION

LREP ROTHWELL, FIGG, ERNST &amp; MANBECK, P.C., 1425 K STREET, N.W., SUITE 800, WASHINGTON, DC, 20005

CLMN Number of Claims: 4

ECL Exemplary Claim: 1

DRWN 2 Drawing Page(s)

LN.CNT 580

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to indicator molecules for detecting the presence or concentration of an analyte in a medium, such as a liquid, and to methods for achieving such detection. More particularly, the invention relates to copolymer macromolecules containing relatively hydrophobic indicator component monomers, and hydrophilic monomers, such that the

macromolecule is capable of use in an aqueous environment.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

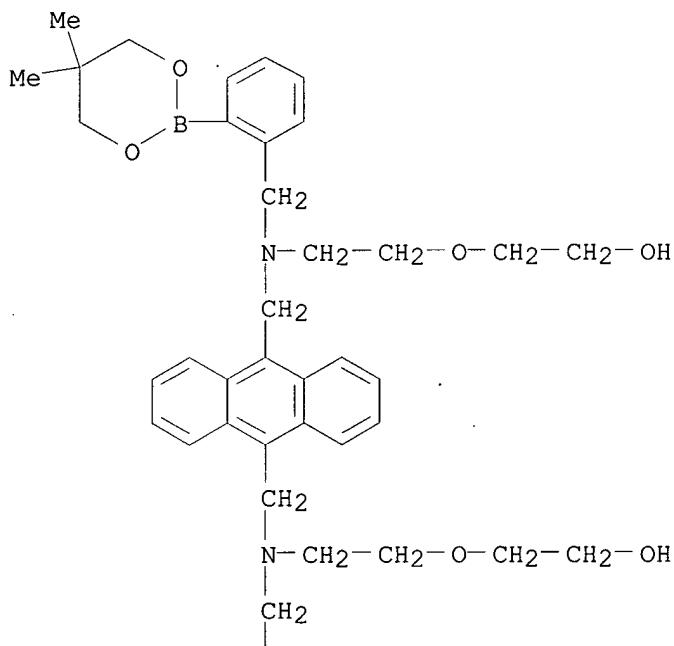
IT 399032-66-7P

(intermediate; fluorescent monomers and polymers for detection of analytes in aq. environments)

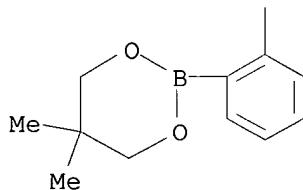
RN 399032-66-7 USPATFULL

CN Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]bis- (9CI) (CA INDEX NAME)

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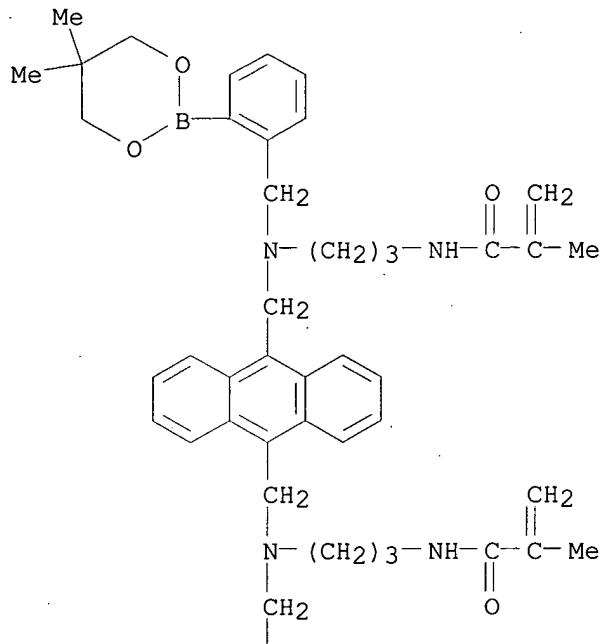
IT 399032-64-5P 399032-67-8P 399032-69-0P

(prep. and polymn.; fluorescent monomers and polymers for detection of analytes in aq. environments)

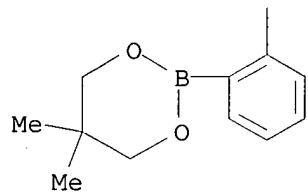
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CN 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]bis[2-methyl- (9CI) (CA INDEX NAME)

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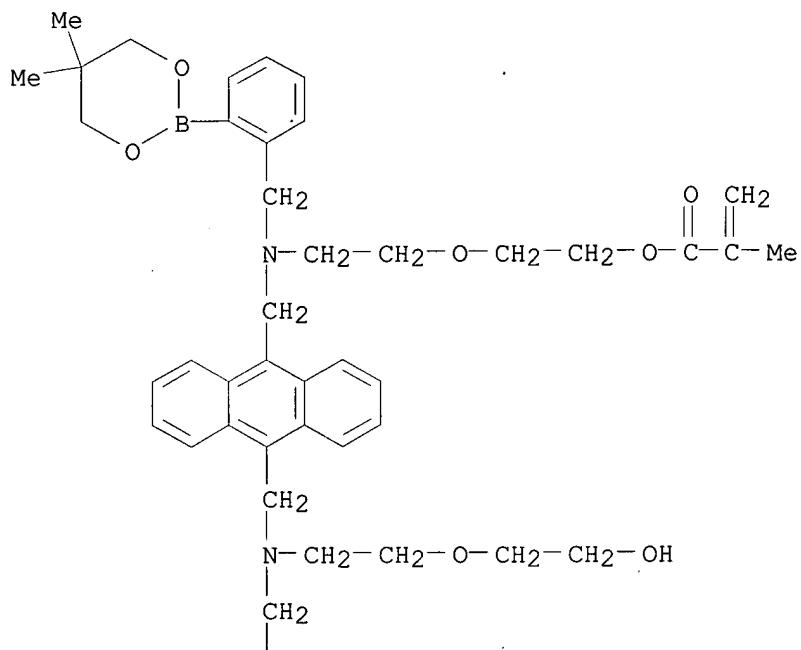
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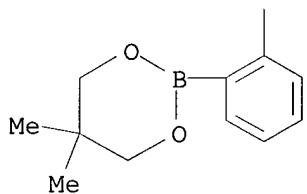
RN 399032-67-8 USPATFULL

CN 2-Propenoic acid, 2-methyl-, 2-[2-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

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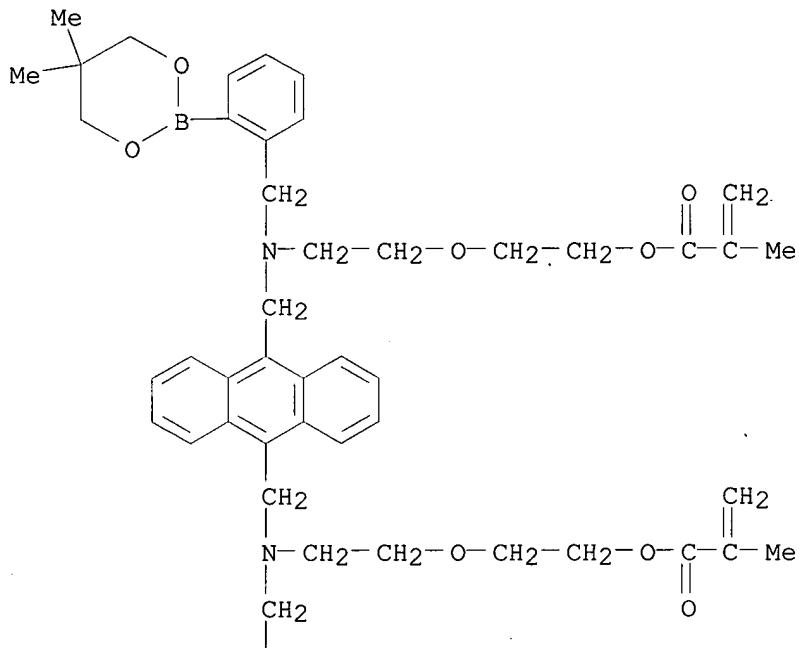
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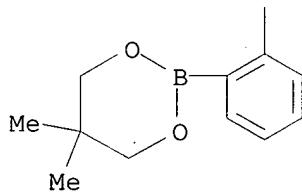
RN 399032-69-0 USPATFULL

CN 2-Propenoic acid, 2-methyl-, 9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl ester (9CI) (CA INDEX NAME)

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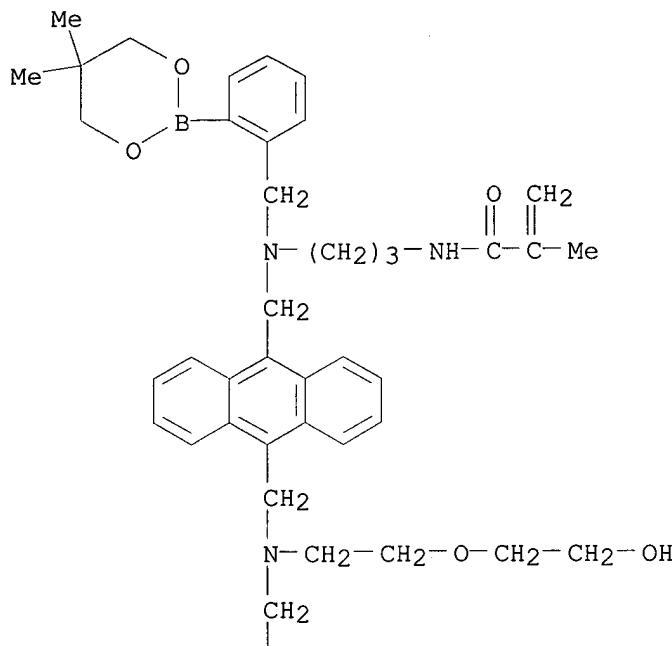
IT 399032-62-3

(prep. and polymn.; fluorescent monomers and polymers for detection of analytes in aq. environments)

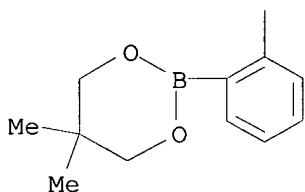
RN 399032-62-3 USPATFULL

CN 2-Propenamide, N-[3-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]propyl]-2-methyl- (9CI) (CA INDEX NAME)

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L49 ANSWER 3 OF 7 USPATFULL on STN  
 AN 2003:10713 USPATFULL  
 TI Detection of analytes in aqueous environments  
 IN Colvin, Arthur E., JR., Mt. Airy, MD, UNITED STATES  
 PI US 2003008408 A1 20030109  
 AI US 2002-193244 A1 20020712 (10)  
 RLI Division of Ser. No. US 2000-632624, filed on 4 Aug 2000, PENDING  
 DT Utility  
 FS APPLICATION  
 LREP ROTHWELL, FIGG, ERNST & MANBECK, P.C., 1425 K STREET, N.W., SUITE 800,  
 WASHINGTON, DC, 20005  
 CLMN Number of Claims: 12  
 ECL Exemplary Claim: 1  
 DRWN 2 Drawing Page(s)  
 LN.CNT 613

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to indicator molecules for detecting the presence  
 or concentration of an analyte in a medium, such as a liquid, and to  
 methods for achieving such detection. More particularly, the invention  
 relates to copolymer macromolecules containing relatively hydrophobic  
 indicator component monomers, and hydrophilic monomers, such that the

macromolecule is capable of use in an aqueous environment.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

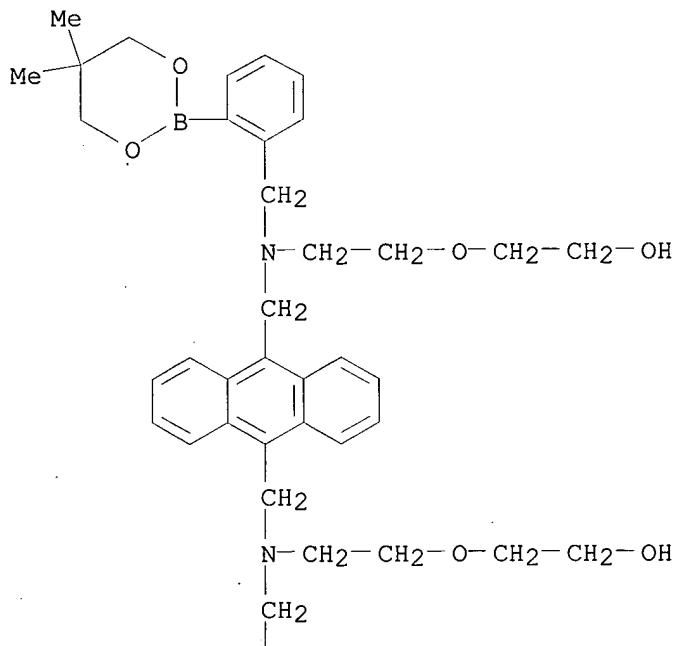
IT 399032-66-7P

(intermediate; fluorescent monomers and polymers for detection of analytes in aq. environments)

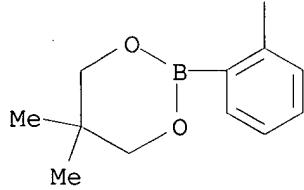
RN 399032-66-7 USPATFULL

CN Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]bis- (9CI) (CA INDEX NAME)

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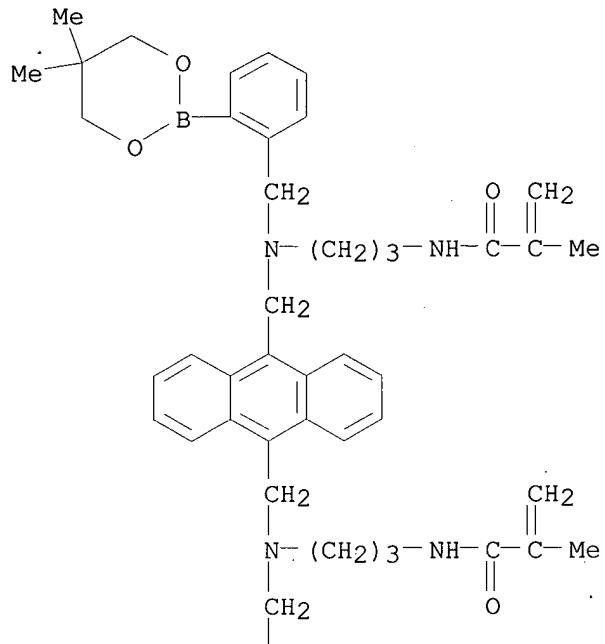
IT 399032-64-5P 399032-67-8P 399032-69-0P

(prep. and polymn.; fluorescent monomers and polymers for detection of analytes in aq. environments)

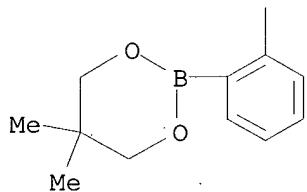
RN 399032-64-5 USPATFULL

CN 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]bis[2-methyl- (9CI) (CA INDEX NAME)

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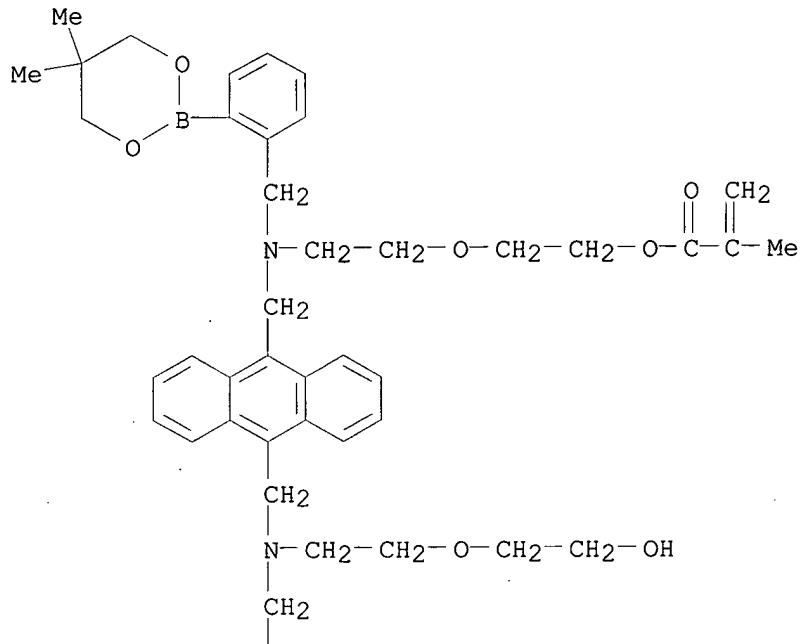
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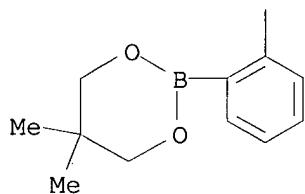
RN 399032-67-8 USPATFULL

CN 2-Propenoic acid, 2-methyl-, 2-[2-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

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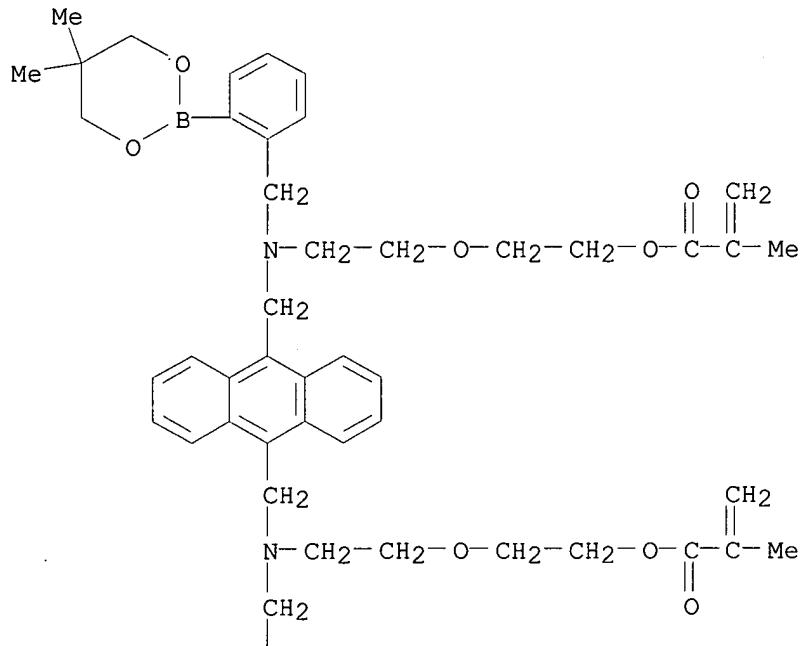
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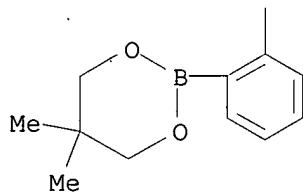
RN 399032-69-0 USPATFULL

CN 2-Propenoic acid, 2-methyl-, 9,10-anthracenediylbis[methylene[[[2-(5,5-dimethyl-1,3-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl] ester (9CI) (CA INDEX NAME)

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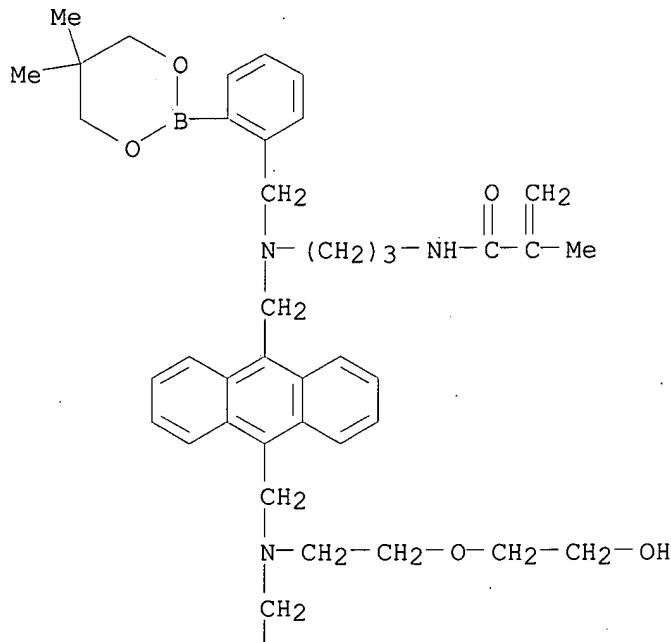
IT 399032-62-3

(prep. and polymn.; fluorescent monomers and polymers for detection of analytes in aq. environments)

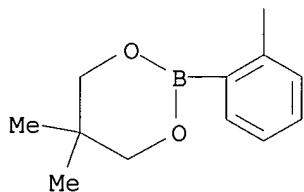
RN 399032-62-3 USPATFULL

CN 2-Propenamide, N-[3-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxyethyl]amino]methyl]-9-anthracyl]methyl]amino]propyl]-2-methyl- (9CI) (CA INDEX NAME)

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L49 ANSWER 4 OF 7 USPATFULL on STN  
 AN 2003:3557 USPATFULL  
 TI Detection of analytes in aqueous environments  
 IN Colvin, Arthur E., JR., Mt. Airy, MD, UNITED STATES  
 PI US 2003003592 A1 20030102  
 AI US 2002-193246 A1 20020712 (10)  
 RLI Division of Ser. No. US 2000-632624, filed on 4 Aug 2000, PENDING  
 DT Utility  
 FS APPLICATION  
 LREP ROTHWELL, FIGG, ERNST & MANBECK, P.C., 1425 K STREET, N.W., SUITE 800,  
 WASHINGTON, DC, 20005  
 CLMN Number of Claims: 11  
 ECL Exemplary Claim: 1  
 DRWN 2 Drawing Page(s)  
 LN.CNT 598  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
 AB The invention relates to indicator molecules for detecting the presence  
 or concentration of an analyte in a medium, such as a liquid, and to  
 methods for achieving such detection. More particularly, the invention  
 relates to copolymer macromolecules containing relatively hydrophobic  
 indicator component monomers, and hydrophilic monomers, such that the

macromolecule is capable of use in an aqueous environment.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

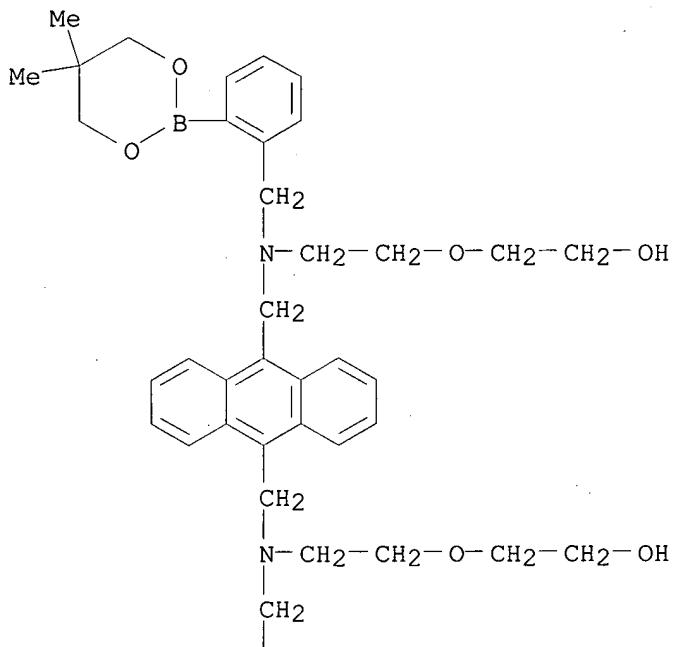
IT 399032-66-7P

(intermediate; fluorescent monomers and polymers for detection of analytes in aq. environments)

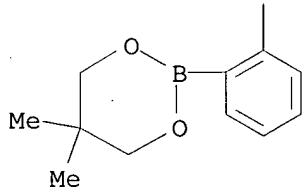
RN 399032-66-7 USPATFULL

CN Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]bis- (9CI) (CA INDEX NAME)

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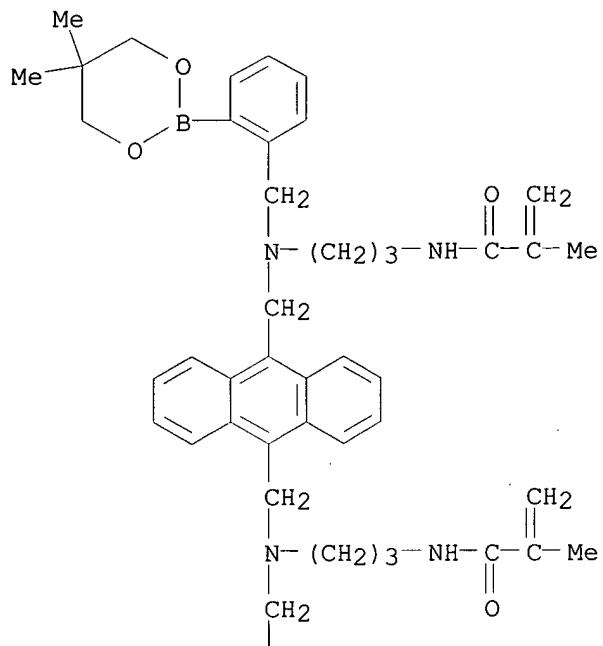
IT 399032-64-5P 399032-67-8P 399032-69-0P

(prep. and polymn.; fluorescent monomers and polymers for detection of analytes in aq. environments)

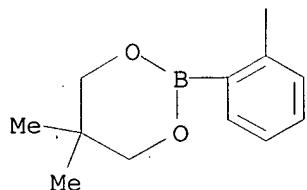
RN 399032-64-5 USPATFULL

CN 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]bis[2-methyl- (9CI) (CA INDEX NAME)

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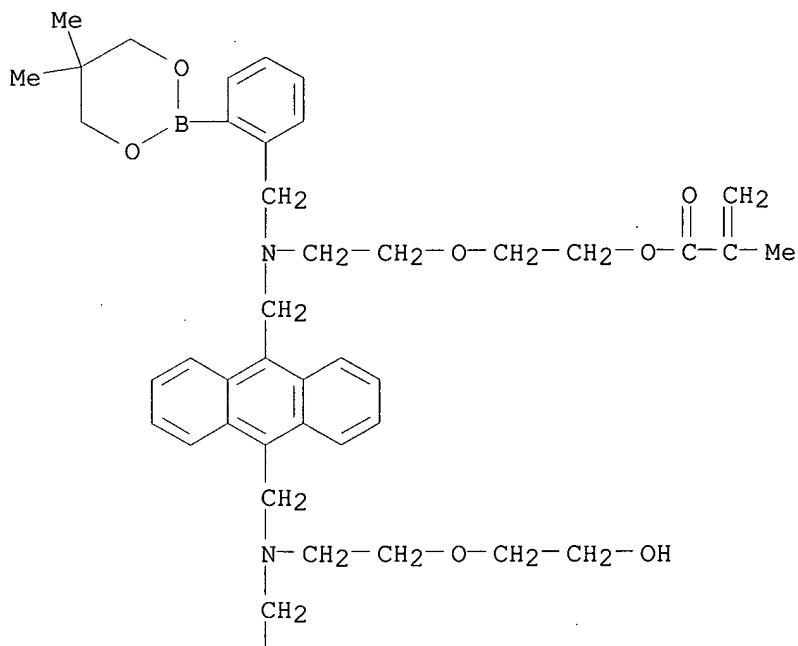


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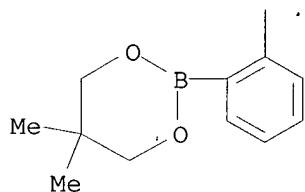


RN 399032-67-8 USPATFULL  
 CN 2-Propenoic acid, 2-methyl-, 2-[2-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracyl]methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

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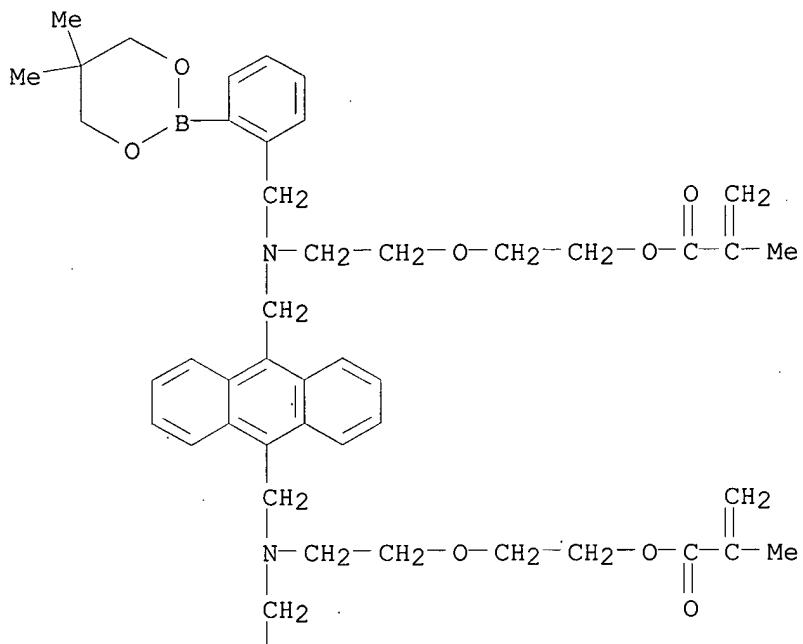
PAGE 2-A



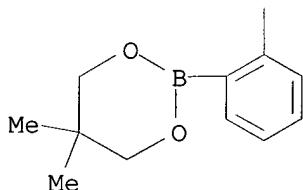
RN 399032-69-0 USPATFULL

CN 2-Propenoic acid, 2-methyl-, 9,10-anthracenediylbis[methylene[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl] ester (9CI) (CA INDEX NAME)

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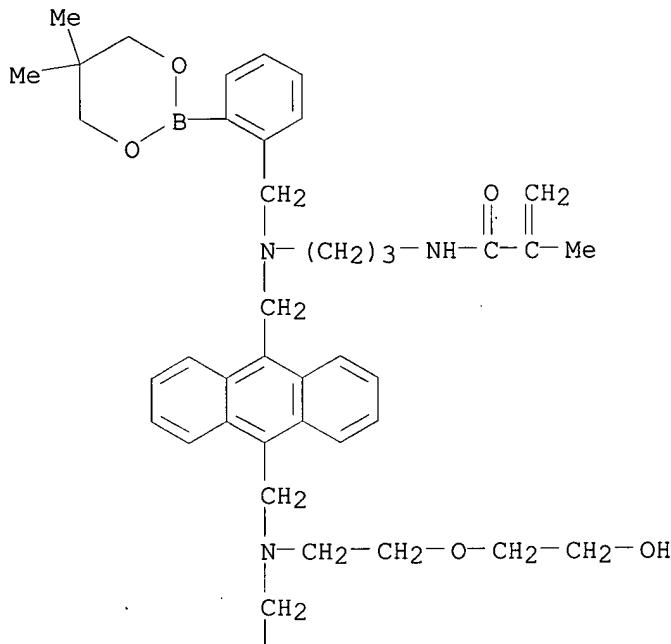
IT 399032-62-3

(prep. and polymn.; fluorescent monomers and polymers for detection of analytes in aq. environments)

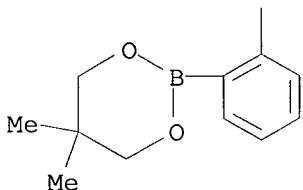
RN 399032-62-3 USPATFULL

CN 2-Propenamide, N-[3-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]propyl-2-methyl- (9CI) (CA INDEX NAME)

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L49 ANSWER 5 OF 7 USPATFULL on STN  
AN 2002:178798 USPATFULL  
TI Detection of analytes  
IN **Daniloff, George Y.**, N. Potomac, MD, UNITED STATES  
    **Kalivretenos, Aristotle G.**, Columbia, MD, UNITED STATES  
    **Nikolaitchik, Alexandre V.**, Damascus, MD, UNITED STATES  
PA **Ullman, Edwin F.**, Atherton, CA, UNITED STATES  
    **Sensors for Medicine and Science, Inc.**, Germantown, MD, UNITED  
    STATES, 20872 (U.S. corporation)  
PI US 2002094586 A1 20020718  
AI US 2001-754219 A1 20010105 (9)  
DT Utility  
FS APPLICATION  
LREP ROTHWELL, FIGG, ERNST & MANBECK, P.C., 1425 K STREET, N.W., SUITE 800,  
    WASHINGTON, DC, 20005  
CLMN Number of Claims: 24  
ECL Exemplary Claim: 1  
DRWN 7 Drawing Page(s)  
LN.CNT 1296  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
AB Disclosed are methods for detecting analytes with indicator systems

which may undergo a molecular configurational change upon exposure to the analyte. The configurational change affects a detectable quality associated with the indicator system, thereby allowing detection of the presence or concentration of the analyte.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

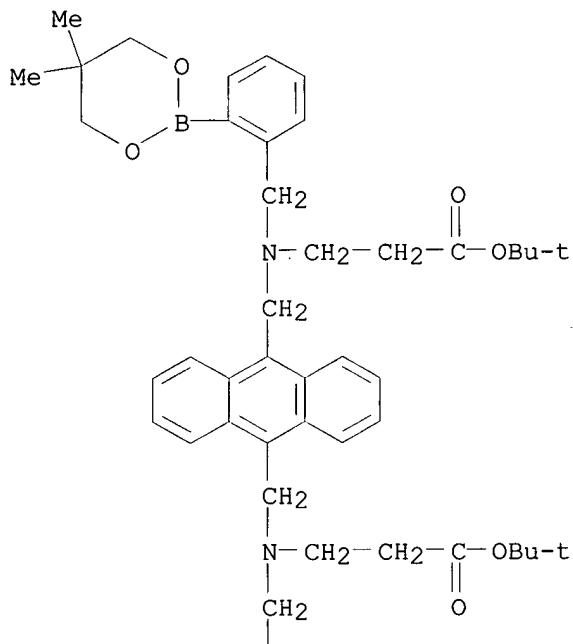
IT 440666-19-3P 440666-20-6P

(detection of analytes)

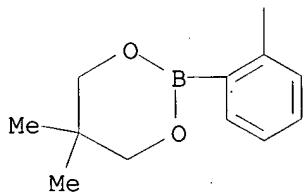
RN 440666-19-3 USPATFULL

CN .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis[N-[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

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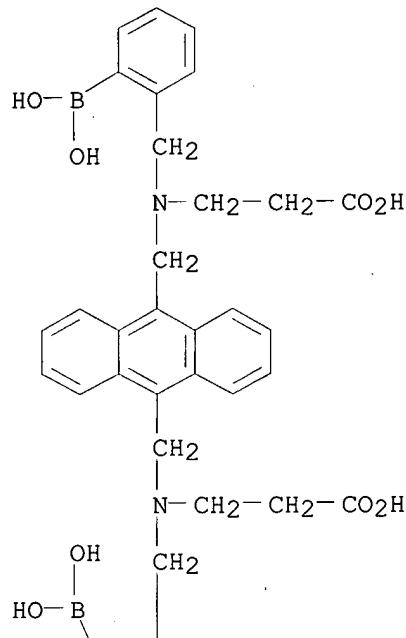
PAGE 2-A



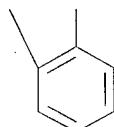
RN 440666-20-6 USPATFULL

CN .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis[N-[(2-boronophenyl)methyl]- (9CI) (CA INDEX NAME)

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L49 ANSWER 6 OF 7 USPATFULL on STN  
 AN 2002:171985 USPATFULL  
 TI Detection of glucose in solutions also containing an alpha-hydroxy acid  
 or a beta-diketone  
 IN **Daniloff, George Y.**, N. Potomac, MD, UNITED STATES  
     **Kalivretenos, Aristotle G.**, Columbia, MD, UNITED STATES  
     **Nikolaitchik, Alexandre V.**, Damascus, MD, UNITED STATES  
 PI US 2002090734 A1 20020711  
 AI US 2001-754217 A1 20010105 (9)  
 DT Utility  
 FS APPLICATION  
 LREP ROTHWELL, FIGG, ERNST & MANBECK, P.C., 1425 K STREET, N.W., SUITE 800,  
 WASHINGTON, DC, 20005  
 CLMN Number of Claims: 28  
 ECL Exemplary Claim: 1  
 DRWN 8 Drawing Page(s)  
 LN.CNT 1148  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
 AB Compositions and methods for determining the presence or concentration  
 of glucose in a sample which may also contain an alpha-hydroxy acid or a  
 beta-diketone. The method uses a compound having at least two  
 recognition elements for glucose, oriented such that the interaction  
 between the compound and glucose is more stable than the interaction

between the compound and the alpha-hydroxy acid or beta-diketone, such that the presence of the alpha-hydroxy acid or the beta-diketone does not substantially interfere with said determination.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

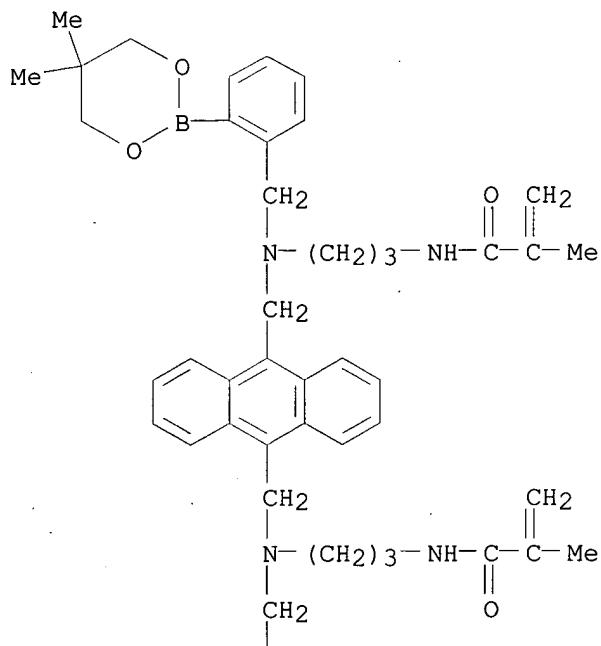
IT 399032-64-5

(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

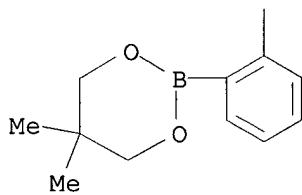
RN 399032-64-5 USPATFULL

CN 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]bis[2-methyl- (9CI) (CA INDEX NAME)

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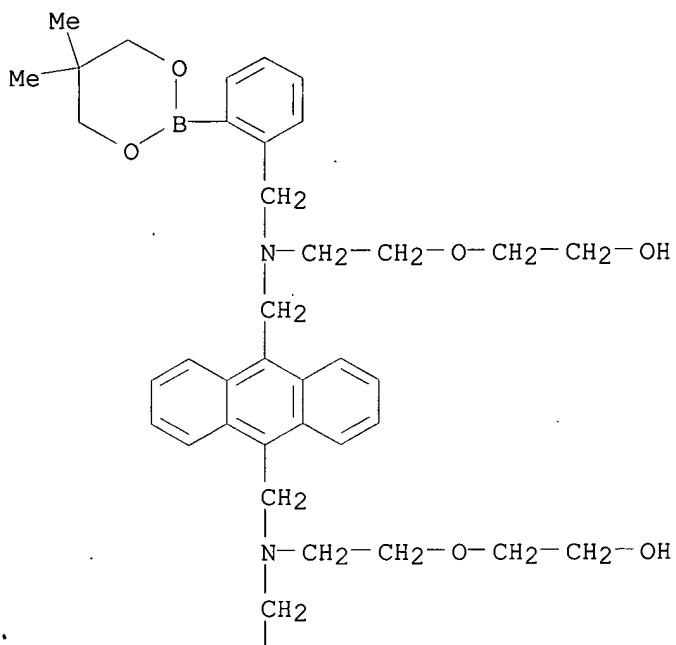
IT 399032-66-7P 399032-67-8P

(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

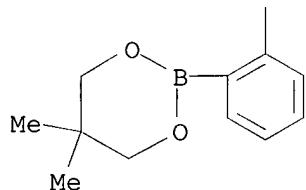
RN 399032-66-7 USPATFULL

CN Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]bis- (9CI) (CA INDEX NAME)

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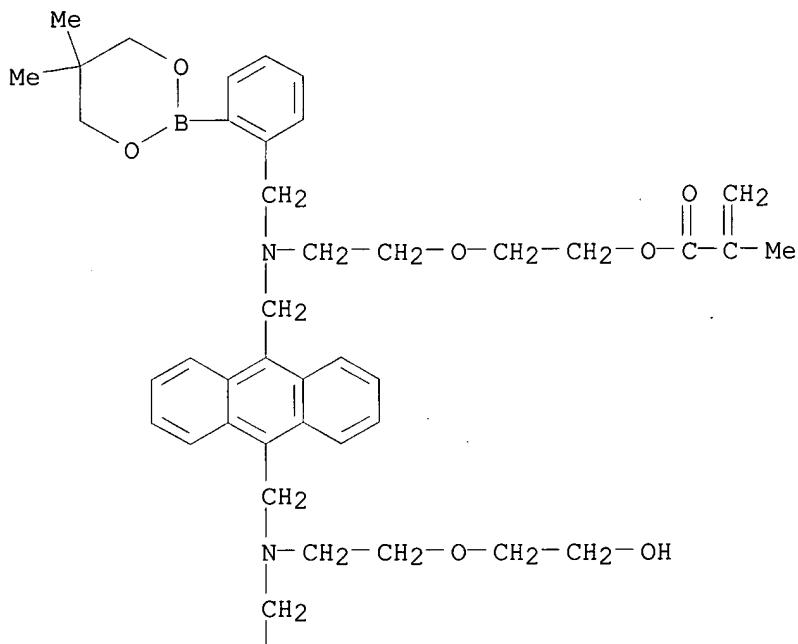
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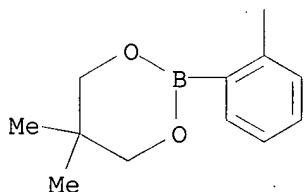
RN 399032-67-8 USPATFULL

CN 2-Propenoic acid, 2-methyl-, 2-[2-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracyenyl]methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

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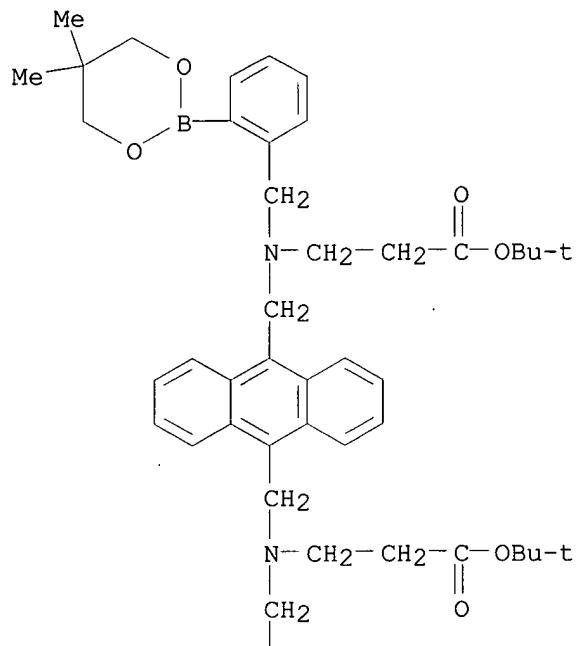
IT 440666-19-3P 441011-77-4P

(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

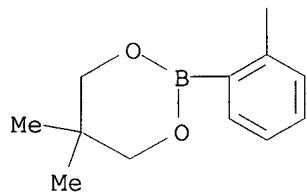
RN 440666-19-3 USPATFULL

RR  
CN .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis[N-[2-(5,5- dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

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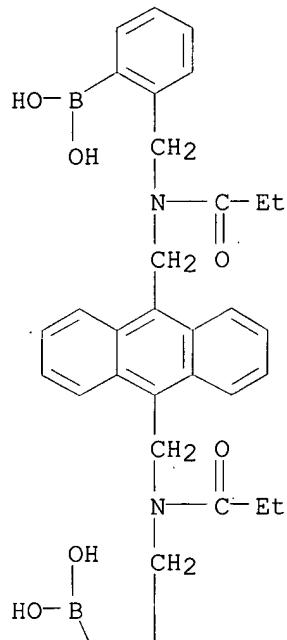
PAGE 2-A



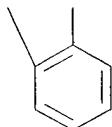
RN 441011-77-4 USPATFULL

CN Boronic acid, [9,10-anthracenediylbis[methylene[(1-oxopropyl)imino]methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

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L49 ANSWER 7 OF 7 USPATFULL on STN  
 AN 2002:72656 USPATFULL  
 TI Detection of analytes in aqueous environments  
 IN Colvin, Arthur E., JR., Mt. Airy, MD, UNITED STATES  
 PA Sensors for Medicine and Science, Inc., Germantown, MD (U.S.  
 corporation)  
 PI US 2002039793 A1 20020404  
 AI US 2001-920627 A1 20010803 (9)  
 RLI Continuation-in-part of Ser. No. US 2000-632624, filed on 4 Aug 2000,  
 PENDING  
 DT Utility  
 FS APPLICATION  
 LREP ROTHWELL, FIGG, ERNST & MANBECK, P.C., 555 13TH STREET, N.W., SUITE 701,  
 EAST TOWER, WASHINGTON, DC, 20004  
 CLMN Number of Claims: 59  
 ECL Exemplary Claim: 1  
 DRWN 9 Drawing Page(s)  
 LN.CNT 1437  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
 AB The invention relates to indicator molecules for detecting the presence  
 or concentration of an analyte in a medium, such as a liquid, and to  
 methods for achieving such detection. More particularly, the invention  
 relates to copolymer macromolecules containing relatively hydrophobic

indicator component monomers, and hydrophilic monomers, such that the macromolecule is capable of use in an aqueous environment.

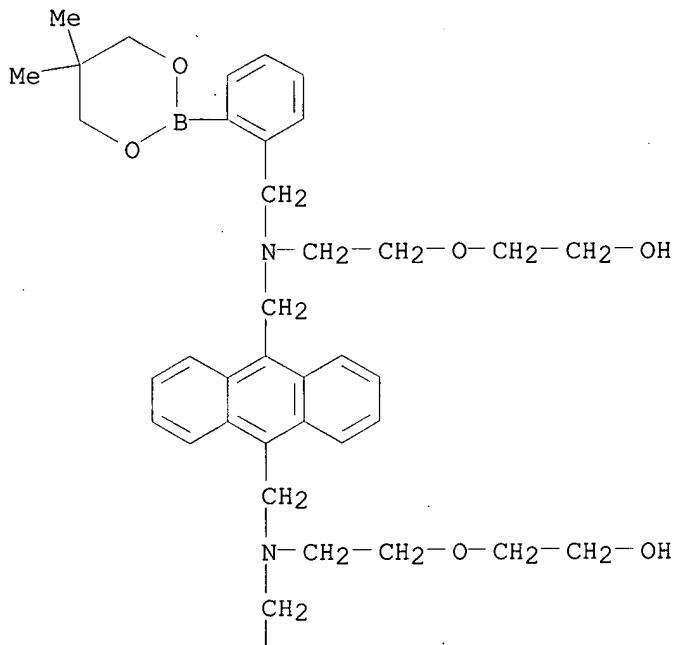
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 399032-66-7P 399032-67-8P 399032-69-0P  
(detection of analytes in aq. environments)

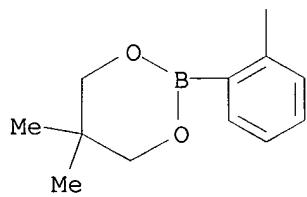
RN 399032-66-7 USPATFULL

Chemical name: Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]oxy]bis- (9CI) (CA INDEX NAME)

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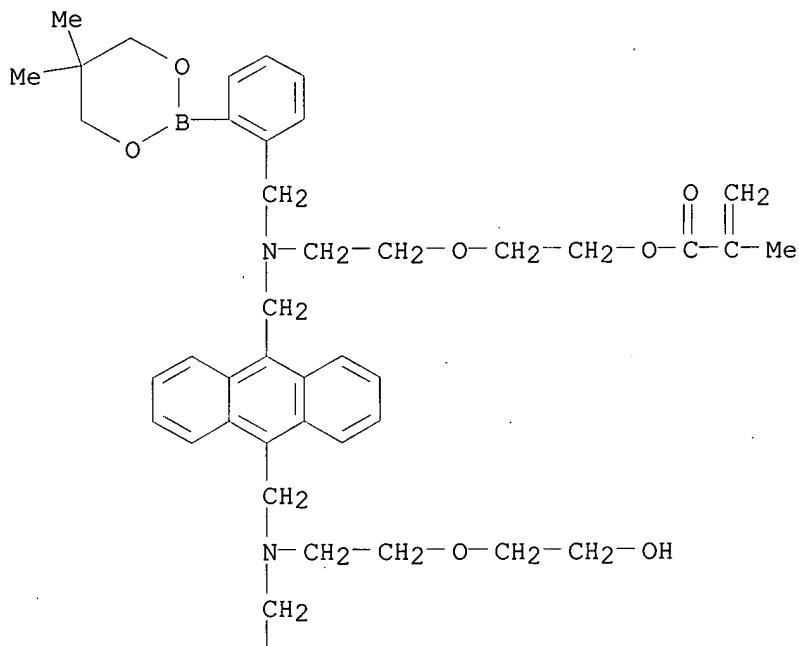
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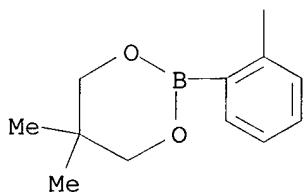
RN 399032-67-8 USPATFULL

CN 2-Propenoic acid, 2-methyl-, 2-[2-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracyenyl]methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

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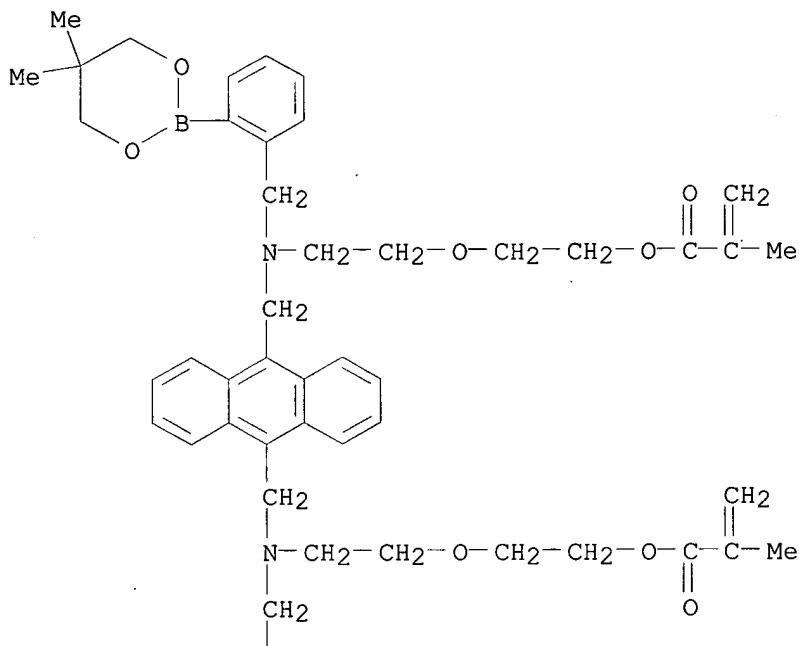
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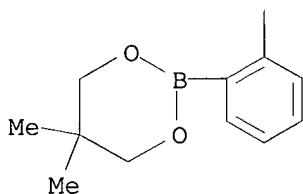
RN 399032-69-0 USPATFULL

CN 2-Propenoic acid, 2-methyl-, 9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl ester (9CI) (CA INDEX NAME)

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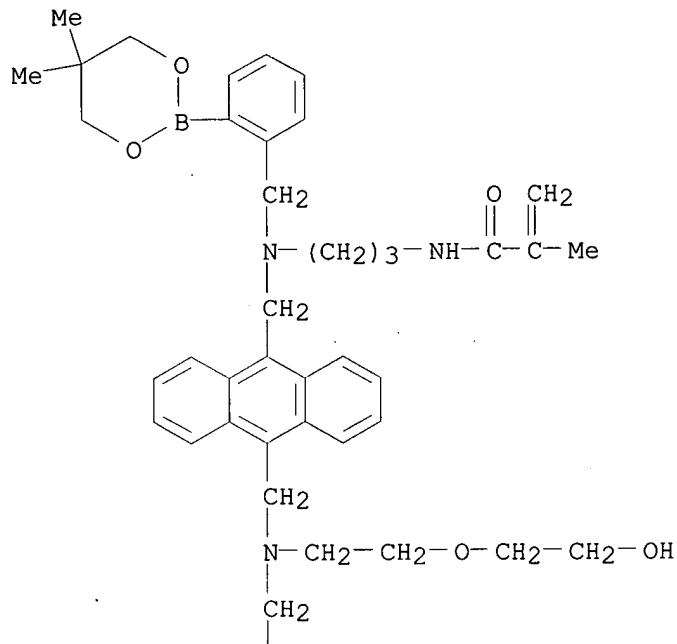
IT 399032-62-3P 399032-64-5P 408306-38-7P  
 408306-39-8P 408306-40-1P 408306-41-2P  
 408306-42-3P

(detection of analytes in aq. environments)

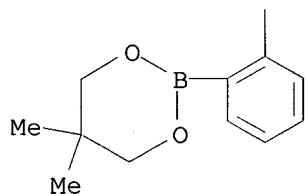
RN 399032-62-3 USPATFULL

CN 2-Propenamide, N-[3-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]propyl]-2-methyl- (9CI) (CA INDEX NAME)

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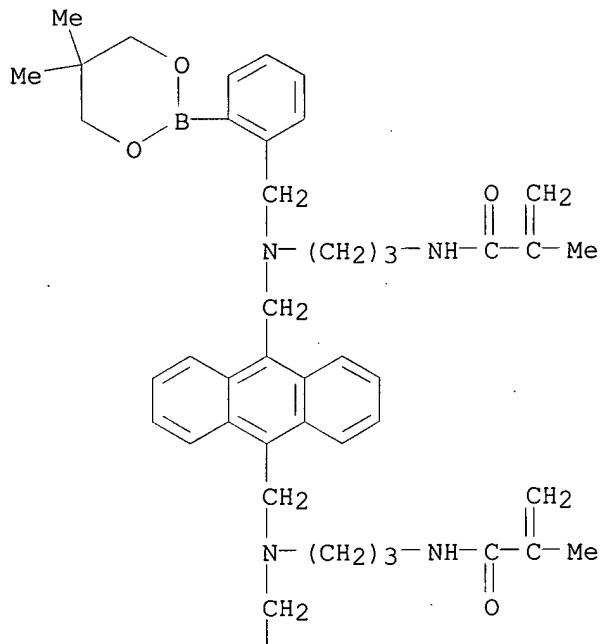
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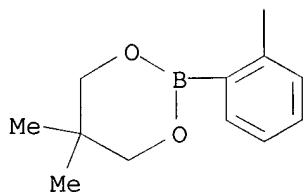
RN 399032-64-5 USPATFULL

CN 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]bis[2-methyl- (9CI) (CA INDEX NAME)]

PAGE 1-A



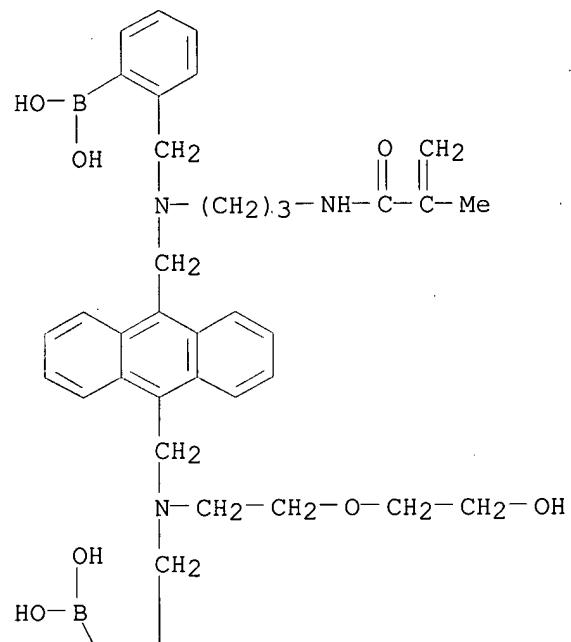
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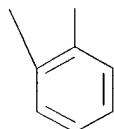
RN 408306-38-7 USPATFULL

CN Boronic acid, [2-[[[[10-[[[(2-boronophenyl)methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl][3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]amino]methyl]phenyl]- (9CI) (CA INDEX NAME)

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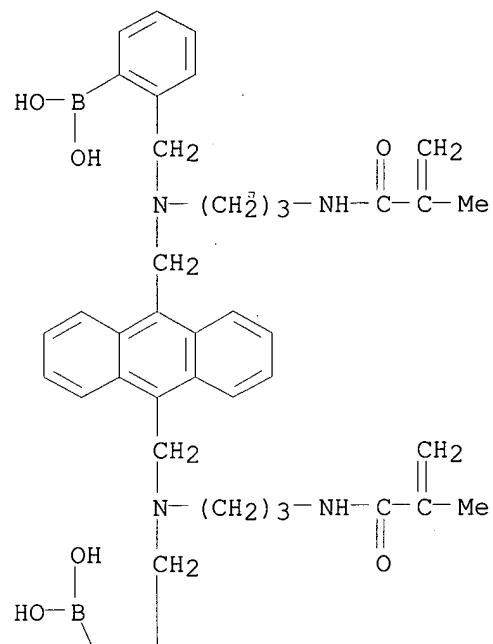


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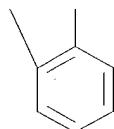


RN 408306-39-8 USPATFULL  
CN Boronic acid, [9,10-anthracenediylbis[methylene[[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]imino)methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

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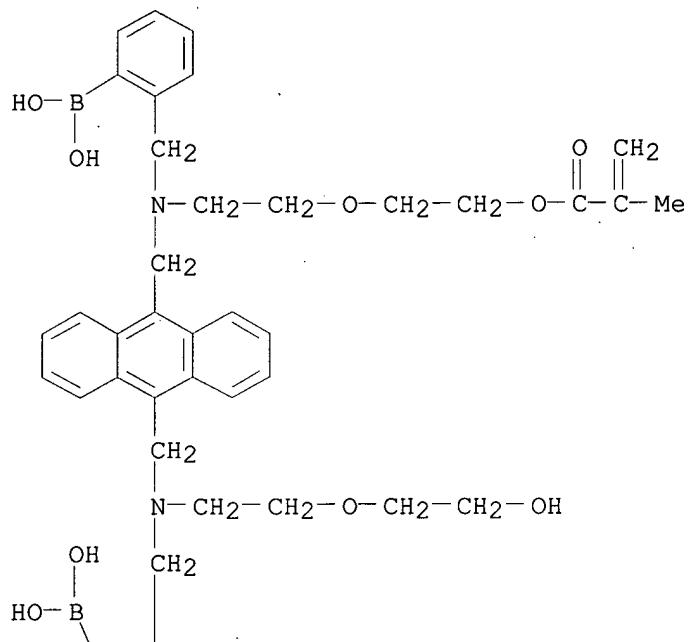


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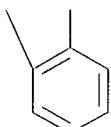


RN 408306-40-1 USPATFULL  
 CN 2-Propenoic acid, 2-methyl-, 2-[2-[(2-boronophenyl)methyl][[10-[(2-boronophenyl)methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



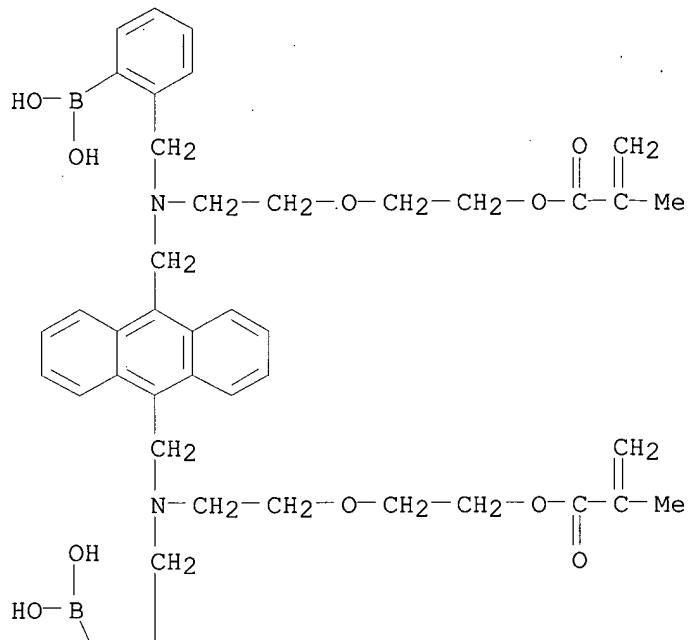
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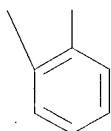
RN 408306-41-2 USPATFULL

CN Boronic acid, [9,10-anthracenediylbis[methylene[[2-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]ethyl]imino]methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

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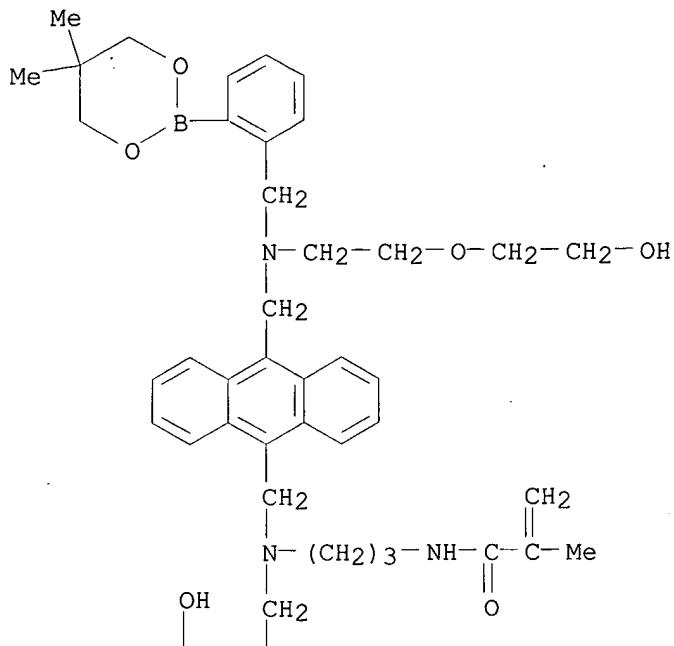


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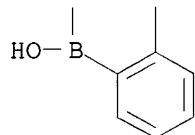


RN 408306-42-3 USPATFULL  
CN Boronic acid, [2-[[[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracyenyl]methyl][3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]amino]methyl]phenyl]- (9CI) (CA INDEX NAME)

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=> file hcaplus  
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FILE COVERS 1907 - 6 Aug 2003 VOL 139 ISS 6  
 FILE LAST UPDATED: 5 Aug 2003 (20030805/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 152 all hitstr tot

L52 ANSWER 1 OF 7 HCPLUS COPYRIGHT 2003 ACS on STN  
 AN 2003:334531 HCPLUS  
 DN 138:334060  
 TI Detection of glucose in solutions also containing an alpha-hydroxy acid or a beta-diketone  
 IN Daniloff, George Y.; Kalivretenos, Aristotle G.;  
 Nikolaitchik, Alexandre V.  
 PA USA  
 SO U.S. Pat. Appl. Publ., 49 pp., Cont.-in-part of U.S. Ser. No. 29,184.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM C12Q001-54  
 ICS G01N033-00  
 NCL 435014000; 436095000  
 CC 9-16 (Biochemical Methods)  
 Section cross-reference(s): 63

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003082663	A1	20030501	US 2002-187903	20020703
	US 2002090734	A1	20020711	US 2001-754217	20010105
	US 2002127626	A1	20020912	US 2001-29184	20011228 <--
PRAI	US 2001-754217	A2	20010105		
	US 2001-269887P	P	20010221		
	US 2001-329746P	P	20011018		
	US 2001-29184	A2	20011228		
	US 2002-363885P	P	20020314		

AB Compns. and methods for detg. the presence or concn. of glucose in a sample which may also contain an alpha-hydroxy acid or a beta-diketone. The method uses a compd. having at least two recognition elements for glucose, oriented such that the interaction between the compd. and glucose is more stable than the interaction between the compd. and the alpha-hydroxy acid or beta-diketone, such that the presence of the alpha-hydroxy acid or the beta-diketone does not substantially interfere with said detn.

ST glucose detection soln alpha hydroxy acid beta diketone

IT Ketones, analysis

RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (1,3-diketones; detection of glucose in solns. also contg.  
 alpha-hydroxy acid or a beta-diketone)

IT Functional groups

(Boronic acid; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Atoms

(Heteroatoms; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Medical goods

(Implantable; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Buffers

(Physiol.; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Functional groups

(Vicinal diol; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Carboxylic acids, uses

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (aliph., compds. contg.; detection of glucose in solns. also contg.

alpha-hydroxy acid or a beta-diketone)

IT Atoms

Blood analysis

Blood plasma

Blood serum

Body fluid

Cerebrospinal fluid

Composition

Concentration (condition)

Fluorescence

Fluorescence quenching

Fluorescent substances

Fluorometry

Hydrolysis

Immobilization, molecular

Indicators

Linking agents

Lymph

Molecules

Reaction

Saliva

Samples

Solids

Solutions

Stability

Sweat

Tear (ocular fluid)

Urine analysis  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Polymers, analysis

Silica gel, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Body fluid  
(interstitial; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Eye  
(intraocular fluid; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Acids, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(oxo, .alpha.-; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 50-99-7, D-Glucose, analysis  
RL: ANT (Analyte); ANST (Analytical study)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 541-50-4, 3-Oxo-butanoic acid, analysis  
RL: ANT (Analyte); ARU (Analytical role, unclassified); PRP (Properties); ANST (Analytical study)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 79-09-4D, Propionic acid, compds. contg. 81-83-4D, Naphthalimide, compds. contg. 110-82-7D, Hexamethylene, compds. contg. 120-12-7D, Anthracene, compds. contg. 124-40-3D, Dimethylamine, compds. contg. 1333-74-0D, Hydrogen, compds. contg. 7440-44-0D, Carbon, compds. contg. 7704-34-9D, Sulfur, compds. contg. 7723-14-0D, Phosphorus, compds. contg. 7727-37-9D, Nitrogen, compds. contg. 7782-44-7D, Oxygen, compds. contg. 11120-48-2D, Telluric acid, compds. contg. 12134-79-1D, Germanic acid, compds. contg. 13464-58-9D, Arsenious acid, compds. contg. 13780-71-7D, Boronic acid, compds. contg. 15502-74-6D,

Arsenite, compds. contg. 29256-93-7D, compds. contg. 53112-54-2D,  
 Tellurate ion, compds. contg.  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)

IT 50-21-5, analysis  
 RL: ARU (Analytical role, unclassified); PRP (Properties); ANST  
 (Analytical study)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)

IT 79-41-4, Methacrylic acid, reactions 81-86-7 100-10-7,  
 4-Dimethylaminobenzaldehyde 110-18-9, N,N,N',N',-  
 Tetramethylethylenediamine 110-26-9, n,n'-Methylenebisacrylamide  
 124-09-4, 1,6-Diaminohexane, reactions 128-37-0, reactions 130-22-3  
 623-27-8, 1,4-Benzene dicarboxaldehyde 645-36-3, Aminoacetaldehyde  
 diethyl acetal 929-06-6, 2-(2-Aminoethoxy)ethanol 2680-03-7,  
 n,n-Dimethylacrylamide 5039-78-1, TMAMA 6192-52-5, p-Toluenesulfonic  
 acid monohydrate 7087-68-5, Diea 10387-13-0, 9,10-  
 Bis(chloromethyl)anthracene 24463-19-2, 9-Chloromethylanthracene  
 31922-97-1 51410-72-1, MAPTAC 57951-36-7 58620-93-2 72607-53-5,  
 N-(3-Aminopropyl)methacrylamide hydrochloride 79238-88-3  
**399032-64-5** 399032-71-4 441011-76-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)

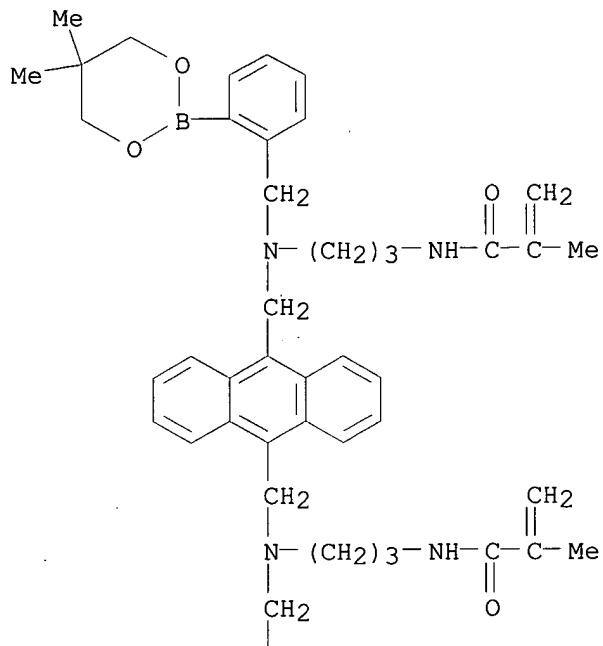
IT 108366-02-5P 259660-47-4P 399032-57-6P **399032-66-7P**  
**399032-67-8P** 399032-72-5P 399032-73-6P 440665-99-6P  
 440666-00-2P 440666-01-3P 440666-02-4P 440666-03-5P 440666-18-2P  
 441011-75-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)

IT 399032-68-9P 440665-90-7P 440665-98-5P **440666-19-3P**  
 441011-74-1DP, derivs. **441011-77-4P**  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)

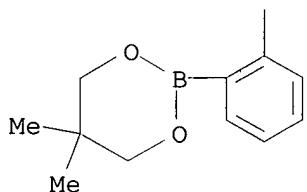
IT **399032-64-5**  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)

RN 399032-64-5 HCAPLUS  
 CN 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[[2-(5,5-dimethyl-  
 1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]]bis[2-methyl-  
 (9CI) (CA INDEX NAME)

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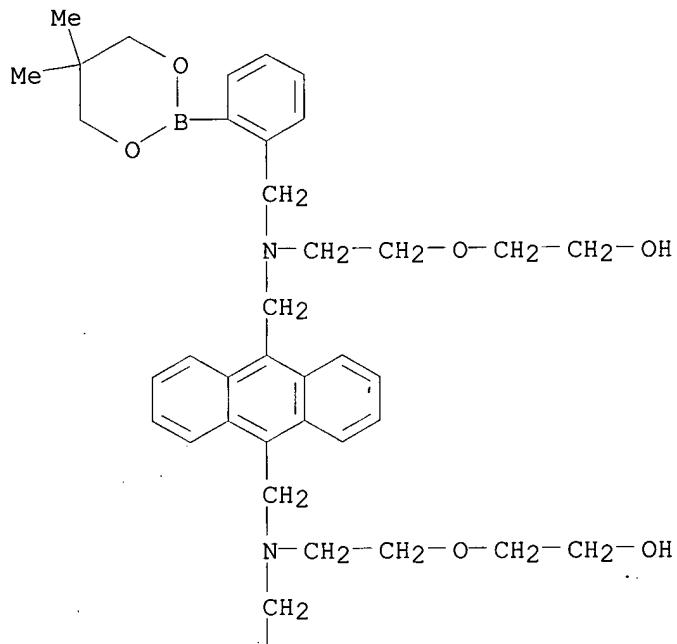
IT 399032-66-7P 399032-67-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
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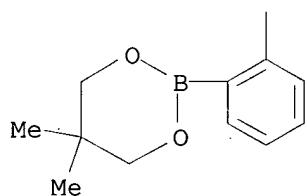
RN 399032-66-7 HCAPLUS

CN Ethanol, 2,2'-[9,10-anthracenediyl]bis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]bis- (9CI) (CA INDEX NAME)

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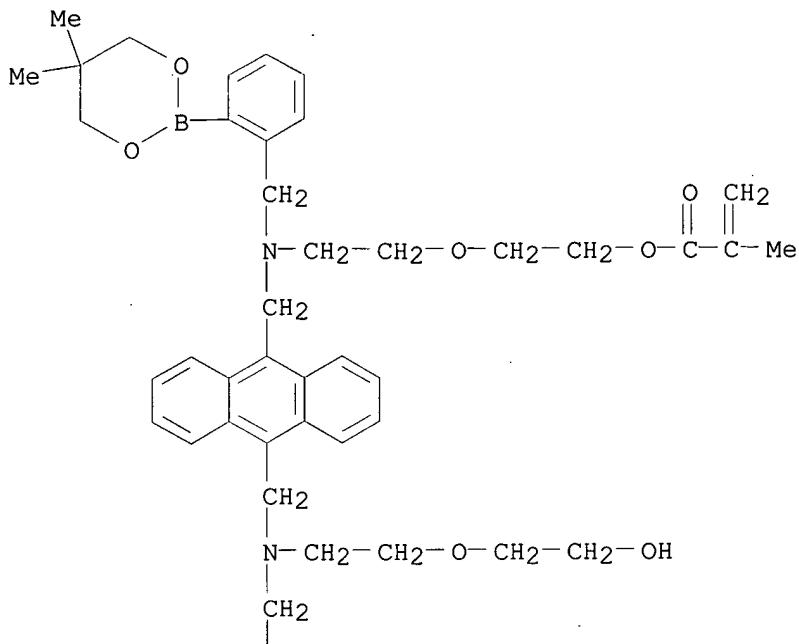
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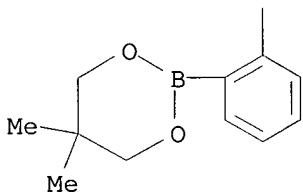
RN 399032-67-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[2-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]ethoxyethyl ester (9CI) (CA INDEX NAME)

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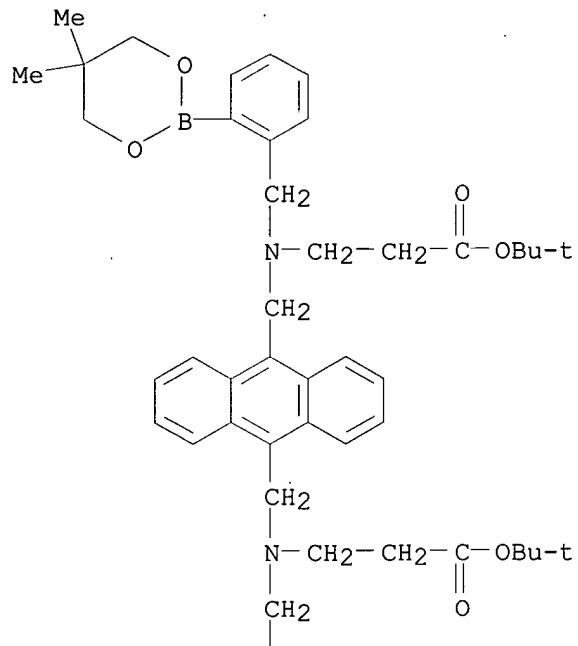
IT 440666-19-3P 441011-77-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)

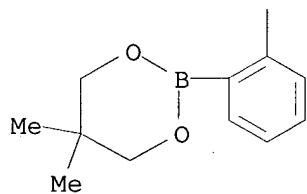
RN 440666-19-3 HCAPLUS

CN .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis[N-[[2-(5,5-  
 dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-, bis(1,1-dimethylethyl)  
 ester (9CI) (CA INDEX NAME)

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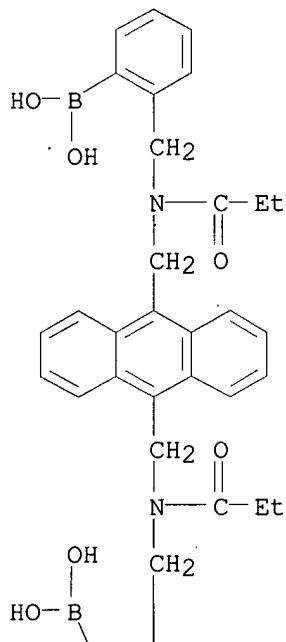
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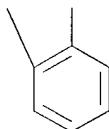
RN 441011-77-4 HCAPLUS

CN Boronic acid, [9,10-anthracenediylbis[methylene[(1-oxopropyl)imino]methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



L52 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2002:696548 HCAPLUS  
 DN 137:181947  
 TI Detection of glucose in solutions also containing an alpha-hydroxy acid or  
 a beta-diketone  
 IN Daniloff, George Y.; Kalivretenos, Aristotle G.;  
 Nikolaitchik, Alexandre V.  
 PA Sensors for Medicine and Science, Inc., USA  
 SO U.S. Pat. Appl. Publ., 34 pp., Cont.-in-part of U.S. Ser. No. 754,217.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM C12Q001-54  
 ICS G01N033-00  
 NCL 435014000  
 CC 9-16 (Biochemical Methods)  
 Section cross-reference(s): 63  
 FAN.CNT 4

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PI	US 2002127626	A1	20020912	US 2001-29184	20011228 <--
	US 2002090734	A1	20020711	US 2001-754217	20010105
	WO 2002057788	A2	20020725	WO 2002-US199	20020104

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,  
 PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,  
 UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,  
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2003082663 A1 20030501 US 2002-187903 20020703

PRAI US 2001-754217 A2 20010105  
 US 2001-269887P P 20010221  
 US 2001-329746P P 20011018  
 US 2001-29184 A 20011228  
 US 2002-363885P P 20020314

OS MARPAT 137:181947

AB The invention concerns compns. and methods for detg. the presence or  
 concn. of glucose in a sample which may also contain an alpha-hydroxy acid  
 or a beta-diketone. The method uses a compd. having at least two  
 recognition elements for glucose, oriented such that the interaction  
 between the compd. and glucose is more stable than the interaction between  
 the compd. and the alpha-hydroxy acid or beta-diketone, such that the  
 presence of the alpha-hydroxy acid or the beta-diketone does not  
 substantially interfere with said detn.

ST glucose soln alpha hydroxy acid beta diketone

IT Atoms

Blood analysis

Blood plasma

Blood serum

Body fluid

Buffers

Cerebrospinal fluid

Concentration (condition)

Eye

Fluorescence quenching

Fluorescent substances

Fluorometry

Functional groups

Hydrolysis

Immobilization, molecular

Linking agents

Lymph

Medical goods

Saliva

Solutions

Sweat

Tear (ocular fluid)

Urine analysis

(detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)

IT Carboxylic acids, uses

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)

IT Acids, analysis

RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)

IT Ketones, analysis

RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)

IT Polymers, analysis

IT RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Silica gel, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 50-99-7, D-Glucose, analysis  
RL: ANT (Analyte); ANST (Analytical study)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 541-50-4, Butanoic acid, 3-oxo-, analysis  
RL: ANT (Analyte); ARU (Analytical role, unclassified); ANST (Analytical study)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 79-09-4D, Propionic acid, derivs. 81-83-4D, Naphthalimide, derivs.  
110-82-7D, Hexamethylene, derivs. 120-12-7D, Anthracene, derivs.  
124-40-3D, Dimethylamine, derivs. 1333-74-0D, Hydrogen, derivs.  
7440-44-0D, Carbon, derivs. 7704-34-9D, Sulfur, derivs. 7723-14-0D,  
Phosphorus, derivs. 7727-37-9D, Nitrogen, derivs. 7782-44-7D, Oxygen,  
derivs. 11120-48-2D, Telluric acid, derivs. 12134-79-1D, Germanic  
acid, derivs. 13464-58-9D, Arsenious acid, derivs. 13780-71-7D,  
Boronic acid, derivs. 15502-74-6D, Arsenite, derivs. 29256-93-7D,  
Benzenamine, N,N,?-trimethyl-, derivs. 53112-54-2D, Tellurate ion,  
derivs.  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 399032-64-5P, 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]bis[2-methyl-  
RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 399032-62-3P, 2-Propenamide, N-[3-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracyenyl]methyl]amino]propyl]-2-methyl- 399032-69-0P,  
2-Propenoic acid, 2-methyl-, 9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediylxy-  
2,1-ethanediyl ester 443290-73-1P, Boronic acid,  
[9,10-anthracenediylbis[methylene[(5-aminopentyl)imino]methylene-2,1-phenylene]]biss-, bis(trifluoroacetate) 443290-76-4P, Boronic acid,  
[2-[[[2-[2-[2-(3-borono-5-nitrobenzoyl)amino]ethyl]-2,3-dihydro-1,3-dioxo-1H-benz[de]isoquinolin-6-yl]amino]ethyl]methylamino]methyl]phenyl]-  
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 50-21-5, Propanoic acid, 2-hydroxy-, analysis  
RL: ARU (Analytical role, unclassified); PRP (Properties); ANST (Analytical study)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 79-41-4, Methacrylic acid, reactions 81-86-7, 1H,3H-Naphtho[1,8-cd]pyran-1,3-dione, 6-bromo- 100-10-7, 4-Dimethylaminobenzaldehyde 110-18-9,  
N,N,N',N'-Tetramethylethylenediamine 110-26-9, n,n'-Methylenebisacrylamide 124-09-4, 1,6-Diaminohexane, reactions  
128-37-0, Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl-, reactions  
130-22-3, 2-Anthracenesulfonic acid, 9,10-dihydro-3,4-dihydroxy-9,10-dioxo-

, monosodium salt 623-27-8, 1,4-Benzenedicarboxaldehyde 645-36-3, Aminoacetaldehyde diethyl acetal 929-06-6 2680-03-7, n,n-Dimethylacrylamide 5039-78-1, Ethanaminium, N,N,N-trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]-, chloride 6192-52-5, p-Toluenesulfonic acid monohydrate 7087-68-5, Diea 10387-13-0, 9,10-Bis(chloromethyl)anthracene 24463-19-2, 9-Chloromethylanthracene 31922-97-1, 2-Propenamide, N,N'-methylenebis-, polymer with 1,2-ethanediol and 2-propenamide 51410-72-1, MAPTAC 57951-36-7, Pyridinamine, N,N-dimethyl- 58620-93-2, .beta.-Alanine, 1,1-dimethylethyl ester, hydrochloride 72607-53-5, N-(3-Aminopropyl)methacrylamide hydrochloride 79238-88-3, 1H-Benz[de]isoquinoline-1,3(2H)-dione, 6-(butylamino)-399032-71-4, 2-Propenamide, N-[3-[(9,10-dihydro-3,4-dihydroxy-9,10-dioxo-2-anthracyl) sulfonyl]amino]propyl]-2-methyl- 441011-76-3, Boronic acid, [2-(bromomethyl)phenyl]-, mono(2,2-dimethylpropyl) ester

RL: RCT (Reactant); RACT (Reactant or reagent)

(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 108366-02-5P, Ethanol, 2,2'-[9,10-anthracenediylbis(methyleneimino-2,1-ethanediyl)]bis- 259660-47-4P, 2-Anthracenesulfonyl chloride, 9,10-dihydro-3,4-dihydroxy-9,10-dioxo- 399032-57-6P, 2-Propenamide, N-[3-[(9-anthracyl)methyl]amino]propyl]-2-methyl- 399032-60-1P, Ethanol, 2-[2-[[10-(chloromethyl)-9-anthracyl]methyl]amino]ethoxy]-, hydrochloride 399032-63-4P, 2-Propenamide, N,N'-[9,10-anthracenediylbis(methyleneimino-3,1-propanediyl)]bis[2-methyl- 399032-66-7P, Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]]bis- 399032-67-8P 399032-72-5P, 2-Propenamide, N,N'-[1,4-phenylenebis(methyleneimino-3,1-propanediyl)]bis[2-methyl- 399032-73-6P, 2-Propenamide, N,N'-[1,4-phenylenebis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]]bis[2-methyl- 408306-43-4P, 2-Propenamide, N-[3-[[[10-[[2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracyl]methyl]amino]propyl]-2-methyl- 440665-99-6P, 1H-Benz[de]isoquinoline-1,3(2H)-dione, 6-bromo-2-(2,2-diethoxyethyl)- 440666-00-2P, 1H-Benz[de]isoquinoline-1,3(2H)-dione, 6-(butylamino)-2-(2,2-diethoxyethyl)- 440666-01-3P, 1H-Benz[de]isoquinoline-2(3H)-acetaldehyde, 6-(butylamino)-1,3-dioxo- 440666-02-4P, 1,6-Hexanediamine, N-[4-(dimethylamino)phenyl]methyl]- 440666-03-5P, 1H-Benz[de]isoquinoline-1,3(2H)-dione, 6-(butylamino)-2-[2-[[6-[[4-(dimethylamino)phenyl]methyl]amino]hexyl]amino]ethyl]- 440666-05-7P, Carbamic acid, [2-(6-bromo-1,3-dioxo-1H-benz[de]isoquinolin-2(3H)-yl)ethyl]-, 1,1-dimethylethyl ester 440666-18-2P, .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis-, bis(1,1-dimethylethyl) ester 441011-75-2P, 2-Propenamide, N-[3-[(9-anthracyl)methyl][[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]amino]propyl]-2-methyl- 443290-70-8P, Carbamic acid, [9,10-anthracenediylbis(methyleneimino-5,1-pentanediyl)]bis-, bis(1,1-dimethylethyl) ester 443290-71-9P, Carbamic acid, [9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-5,1-pentanediyl]]bis-, bis(1,1-dimethylethyl) ester 443290-74-2P, Carbamic acid, [2-[6-[[2-(methylamino)ethyl]amino]-1,3-dioxo-1H-benz[de]isoquinolin-2(3H)-yl]ethyl]-, 1,1-dimethylethyl ester 443290-75-3P, Boronic acid, [2-[[[2-[(2-(2-aminoethyl)-2,3-dihydro-1,3-dioxo-1H-benz[de]isoquinolin-6-yl)amino]ethyl]methylamino]methyl]phenyl]-

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 399032-68-9P 440665-90-7P, Boronic acid, [2-[[[6-[[2-boronophenyl]methyl][2-[6-(butylamino)-1,3-dioxo-1H-benz[de]isoquinolin-2(3H)-yl]ethyl]amino]hexyl][4-(dimethylamino)phenyl]methyl]amino]methyl]phenyl]- 440665-98-5P, 1H-Benz[de]isoquinoline-1,3(2H)-dione, 6-(butylamino)-2-[2-[[6-[[4-(dimethylamino)phenyl]methyl][2-(5,5-

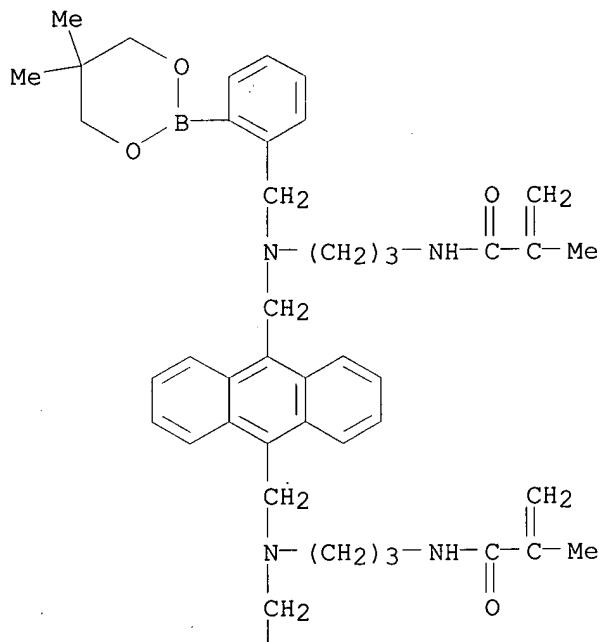
dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]amino]hexyl] [[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]amino]ethyl]-  
**440666-19-3P**, .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis[N-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-, bis(1,1-dimethylethyl) ester 441011-74-1DP, 1-Propanaminium, N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-propenyl)amino]-, chloride, polymer with anthracene, derivs. **441011-77-4P**, Boronic acid, [9,10-anthracenediylbis[methylene[(1-oxopropyl)imino]methylene-2,1-phenylene]]bis-

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

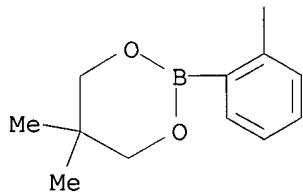
IT **399032-64-5P**, 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]]bis[2-methyl-  
 RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

RN 399032-64-5 HCPLUS  
 CN 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]]bis[2-methyl-  
 (9CI) (CA INDEX NAME)

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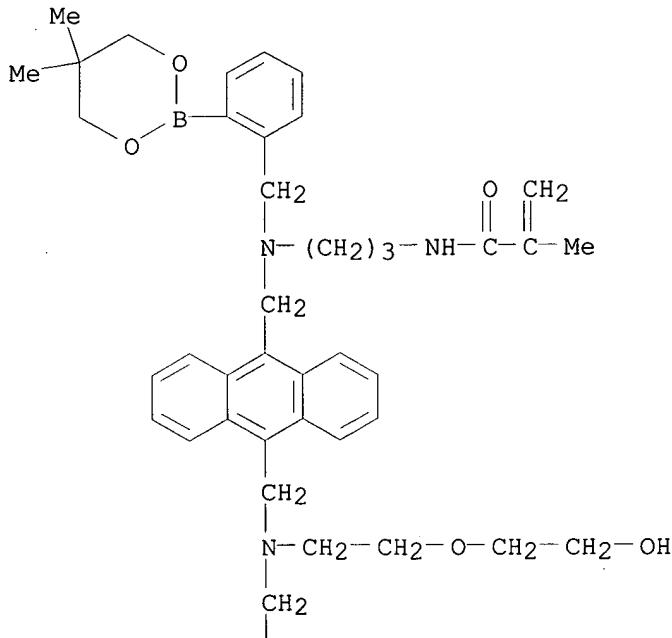


IT 399032-62-3P, 2-Propenamide, N-[3-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]propyl]-2-methyl- 399032-69-0P,  
 2-Propenoic acid, 2-methyl-, 9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl ester 443290-73-1P, Boronic acid,  
 [9,10-anthracenediylbis[methylene[(5-aminopentyl)imino]methylene-2,1-phenylene]]bis-, bis(trifluoroacetate)  
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

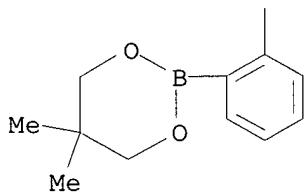
RN 399032-62-3 HCPLUS

CN 2-Propenamide, N-[3-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]propyl]-2-methyl- (9CI) (CA INDEX NAME)

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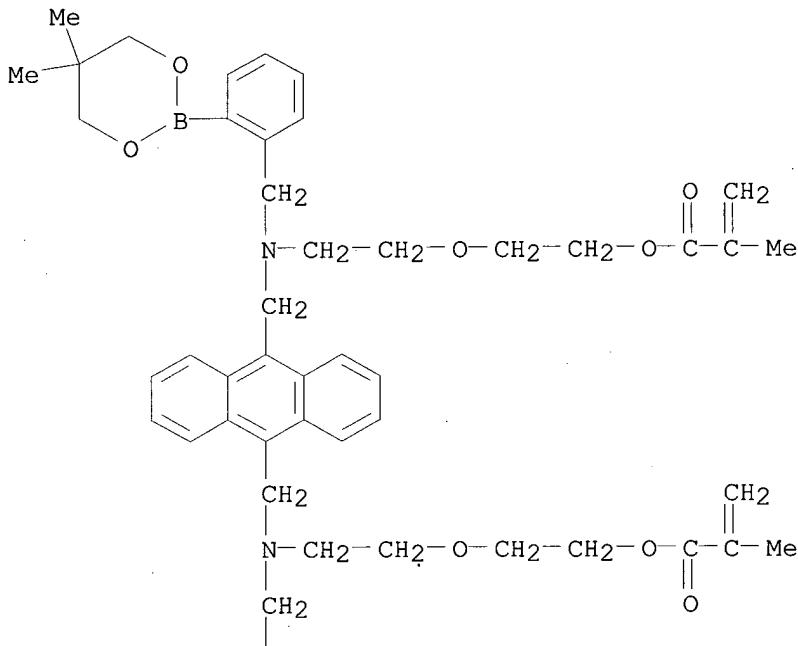
PAGE 2-A



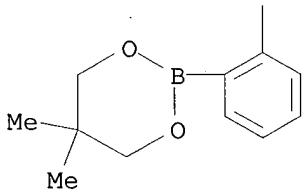
RN 399032-69-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl ester (9CI) (CA INDEX NAME)

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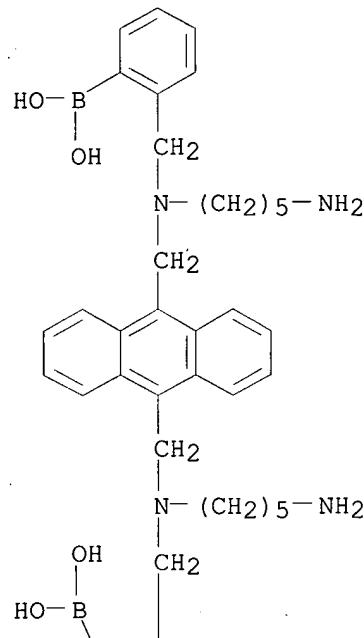
RN 443290-73-1 HCAPLUS

CN Boronic acid, [9,10-anthracenediylbis[methylene[(5-aminopentyl)imino]methylene-2,1-phenylene]]bis-, bis(trifluoroacetate) (9CI) (CA INDEX NAME)

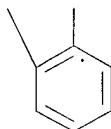
CM 1

CRN 443290-72-0  
 CMF C40 H52 B2 N4 O4

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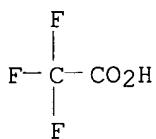


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CM 2

CRN 76-05-1  
 CMF C2 H F3 O2



IT 399032-66-7P, Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]bis- 399032-67-8P 443290-71-9P,  
 Carbamic acid, [9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-5,1-pentanediyyl]bis-,  
 bis(1,1-dimethylethyl) ester

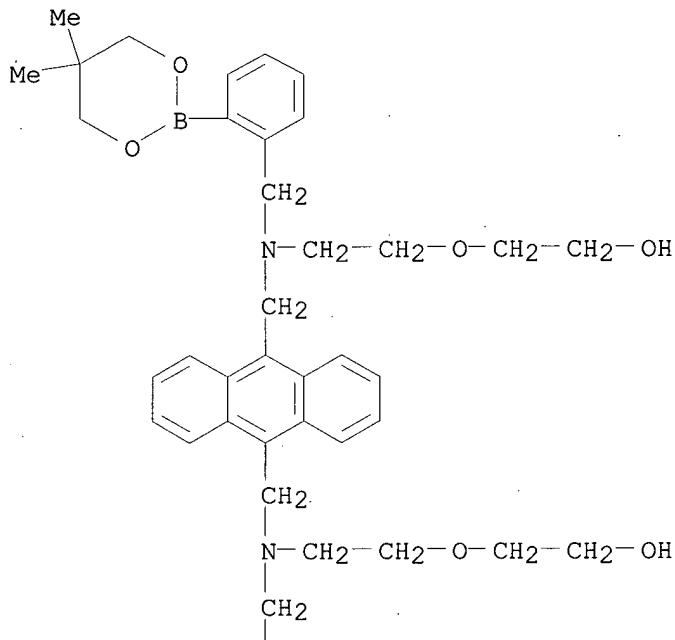
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

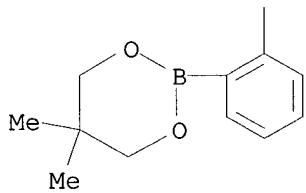
RN 399032-66-7 HCAPLUS

CN Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]bis- (9CI) (CA INDEX NAME)

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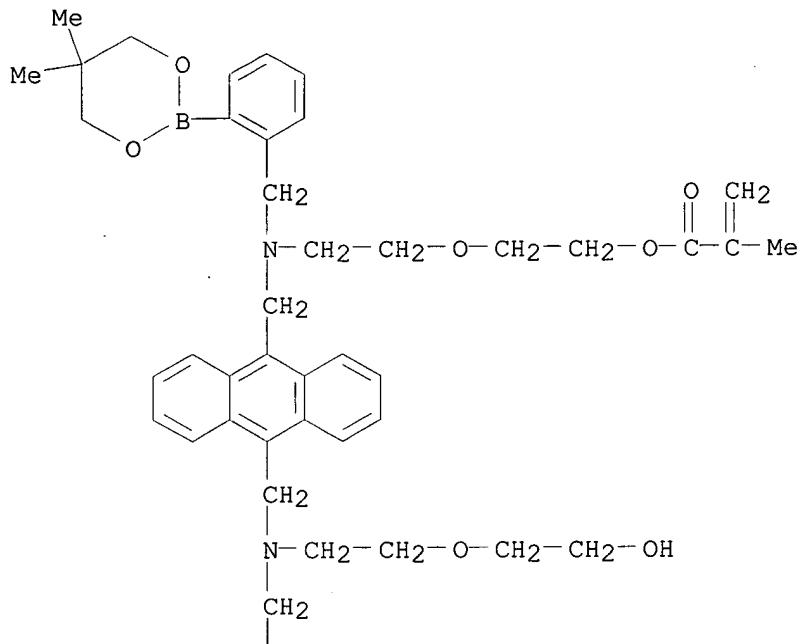
PAGE 2-A



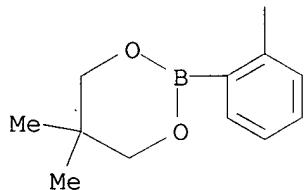
RN 399032-67-8 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[2-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracyl]methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

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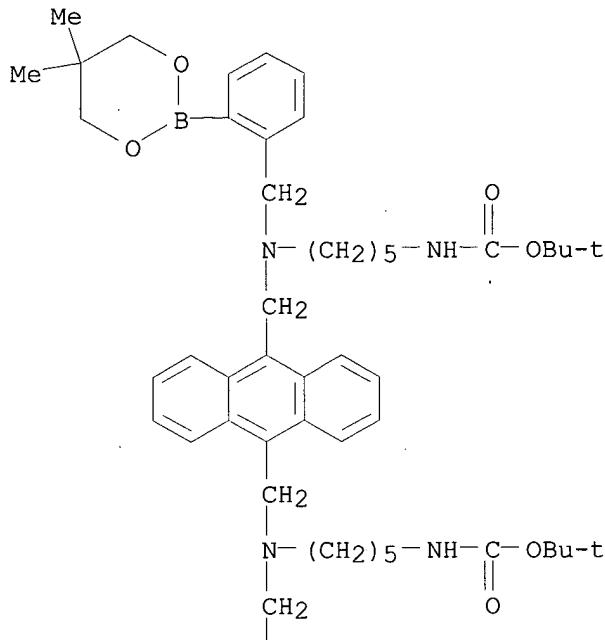


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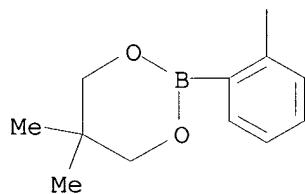


RN 443290-71-9 HCAPLUS  
 CN Carbamic acid, [9,10-anthracenediylbis[methylene[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-5,1-pentanediyi]]bis-,  
 bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

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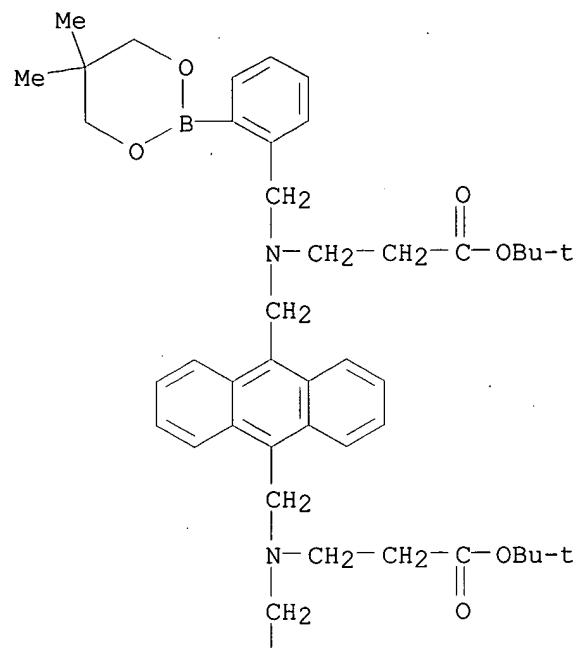
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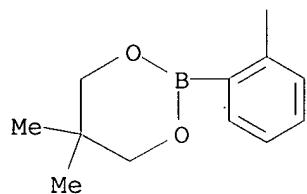
IT 440666-19-3P, .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis[N-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-, bis(1,1-dimethylethyl) ester 441011-77-4P, Boronic acid, [9,10-anthracenediylbis[methylene[(1-oxopropyl)imino]methylen-2,1-phenylene]]bis-  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

RN 440666-19-3 HCAPLUS  
CN .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis[N-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

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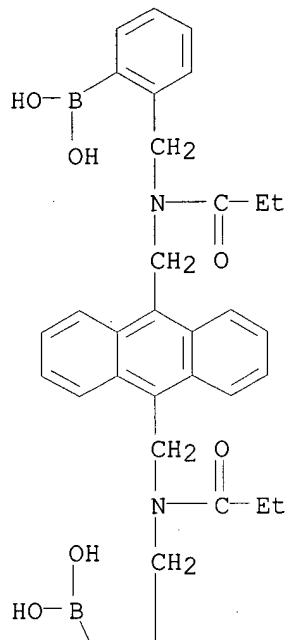
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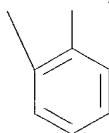
RN 441011-77-4 HCAPLUS

CN Boronic acid, [9,10-anthracenediylbis[methylene[(1-oxopropyl)imino]methylen-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

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L52 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2002:555763 HCAPLUS  
 DN 137:106086  
 TI Detection of glucose in solutions also containing an alpha-hydroxy acid or  
 a beta-diketone  
 IN Daniloff, George Y.; Kalivrentenos, Aristotle G.;  
 Nikolaitchik, Alexandre V.  
 PA Sensors for Medicine and Science, Inc., USA  
 SO PCT Int. Appl., 83 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM G01N033-66  
 CC 9-16 (Biochemical Methods)  
 Section cross-reference(s): 63  
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002057788	A2	20020725	WO 2002-US199	20020104
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,				

PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,  
 UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,  
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 US 2002090734 A1 20020711 US 2001-754217 20010105  
 US 2002127626 A1 20020912 US 2001-29184 20011228 <--  
 PRAI US 2001-754217 A 20010105  
 US 2001-269887P P 20010221  
 US 2001-329746P P 20011018  
 US 2001-29184 A 20011228  
 OS MARPAT 137:106086  
 AB The invention concerns compns. and methods for detg. the presence or  
 concn. of glucose in a sample which may also contain an alpha-hydroxy acid  
 or a beta-diketone. The method uses a compd. having at least two  
 recognition elements for glucose, oriented such that the interaction  
 between the compd. and glucose is more stable than the interaction between  
 the compd. and the alpha-hydroxy acid or beta-diketone, such that the  
 presence of the alpha-hydroxy acid or the beta-diketone does not  
 substantially interfere with said detn.  
 ST glucose soln alpha hydroxy acid beta diketone  
 IT Atoms  
 Blood analysis  
 Blood plasma  
 Blood serum  
 Body fluid  
 Body fluid  
 Buffers  
 Cerebrospinal fluid  
 Concentration (condition)  
 Eye  
 Fluorescence quenching  
 Fluorescent substances  
 Fluorometry  
 Functional groups  
 Hydrolysis  
 Immobilization, molecular  
 Linking agents  
 Lymph  
 Medical goods  
 Saliva  
 Solutions  
 Sweat  
 Tear (ocular fluid)  
 Urine analysis  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)  
 IT Carboxylic acids, uses  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)  
 IT Acids, analysis  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)  
 IT Ketones, analysis  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)  
 IT Polymers, analysis  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)

IT Silica gel, analysis  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 50-99-7, D-Glucose, analysis  
 RL: ANT (Analyte); ANST (Analytical study)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 541-50-4, analysis  
 RL: ANT (Analyte); ARU (Analytical role, unclassified); ANST (Analytical study)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 79-09-4D, Propionic acid, derivs. 81-83-4D, Naphthalimide, derivs.  
 110-82-7D, Hexamethylene, derivs. 120-12-7D, Anthracene, derivs.  
 124-40-3D, Dimethylamine, derivs. 1333-74-0D, Hydrogen, derivs.  
 7440-44-0D, Carbon, derivs. 7704-34-9D, Sulfur, derivs. 7723-14-0D,  
 Phosphorus, derivs. 7727-37-9D, Nitrogen, derivs. 7782-44-7D, Oxygen,  
 derivs. 11120-48-2D, Telluric acid, derivs. 12134-79-1D, Germanic  
 acid, derivs. 13464-58-9D, Arsenious acid, derivs. 13780-71-7D,  
 Boronic acid, derivs. 15502-74-6D, Arsenite, derivs. 29256-93-7D,  
 derivs. 53112-54-2D, Tellurate ion, derivs.  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT **399032-64-5P**  
 RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT **399032-62-3P 399032-69-0P 443290-73-1P**  
 443290-76-4P  
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 50-21-5, analysis  
 RL: ARU (Analytical role, unclassified); PRP (Properties); ANST (Analytical study)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 79-41-4, Methacrylic acid, reactions 81-86-7 100-10-7,  
 4-Dimethylaminobenzaldehyde 110-18-9, N,N,N',N',-  
 Tetramethylethylenediamine 110-26-9, n,n'-Methylenebisacrylamide  
 124-09-4, 1,6-Diaminohexane, reactions 128-37-0, reactions 130-22-3  
 623-27-8, 1,4-Benzenedicarboxaldehyde 645-36-3, Aminoacetaldehyde  
 diethyl acetal 929-06-6 2680-03-7, n,n-Dimethylacrylamide 5039-78-1  
 6192-52-5, p-Toluenesulfonic acid monohydrate 7087-68-5, Diea  
 10387-13-0, 9,10-Bis(chloromethyl)anthracene 24463-19-2,  
 9-Chloromethylanthracene 31922-97-1 51410-72-1, MAPTAC 57951-36-7  
 58620-93-2 72607-53-5, N-(3-Aminopropyl)methacrylamide hydrochloride  
 79238-88-3 399032-71-4 441011-76-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 108366-02-5P 259660-47-4P 399032-57-6P 399032-60-1P 399032-63-4P  
**399032-66-7P 399032-67-8P** 399032-72-5P 399032-73-6P  
 408306-43-4P 440665-99-6P 440666-00-2P 440666-01-3P 440666-02-4P  
 440666-03-5P 440666-05-7P 440666-18-2P 441011-75-2P 443290-70-8P  
**443290-71-9P** 443290-74-2P 443290-75-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

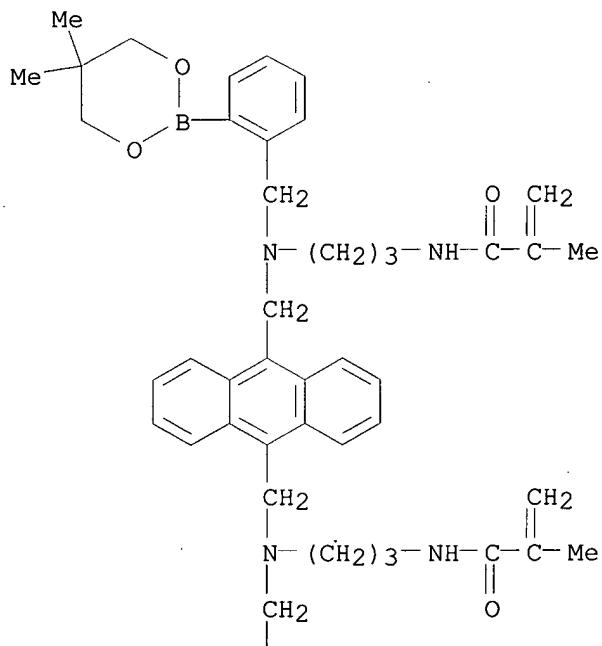
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 399032-68-9P 440665-90-7P 440665-98-5P **440666-19-3P**  
 441011-74-1DP, derivs. **441011-77-4P**  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

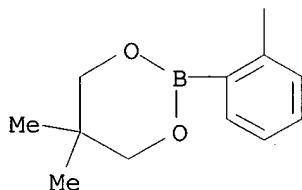
IT **399032-64-5P**  
 RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

RN 399032-64-5 HCAPLUS  
 CN 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]bis[2-methyl-(9CI) (CA INDEX NAME)

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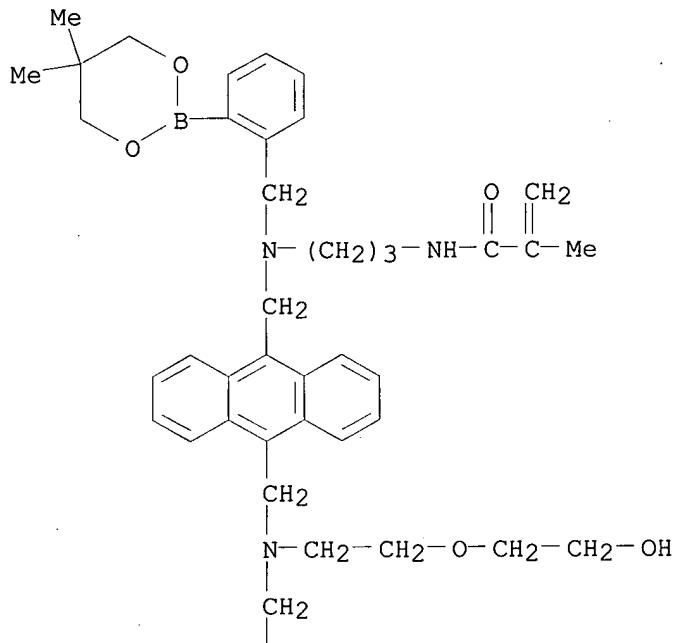
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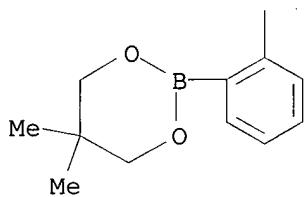
IT **399032-62-3P 399032-69-0P 443290-73-1P**  
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a

RN 399032-62-3 HCAPLUS  
CN 2-Propenamide, N-[3-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracyenyl]methyl]amino]propyl]-2-methyl- (9CI) (CA INDEX NAME)

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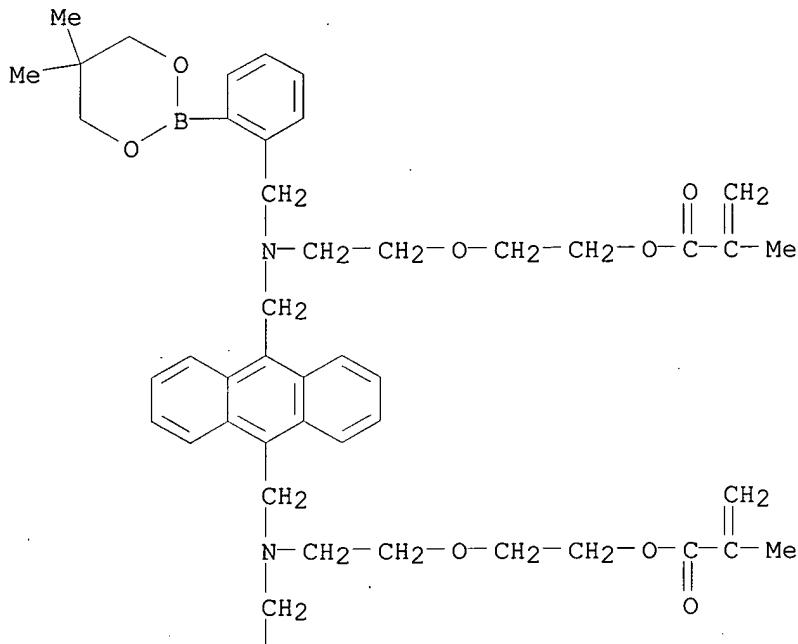


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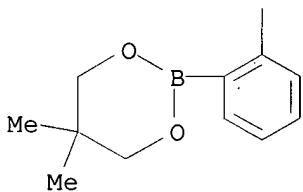


RN 399032-69-0 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl-2,1-ethanediyl ester (9CI) (CA INDEX NAME)

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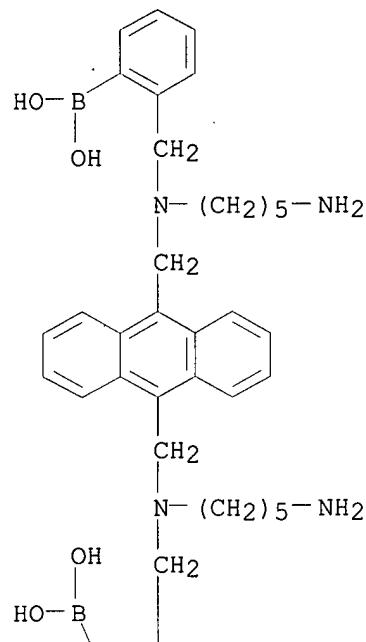


RN 443290-73-1 HCAPLUS  
 CN Boronic acid, [9,10-anthracenediylbis[methylene[(5-aminopentyl)imino]methylene-2,1-phenylene]]bis-, bis(trifluoroacetate) (9CI) (CA INDEX NAME)

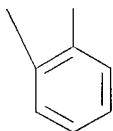
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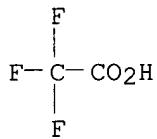


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CM 2

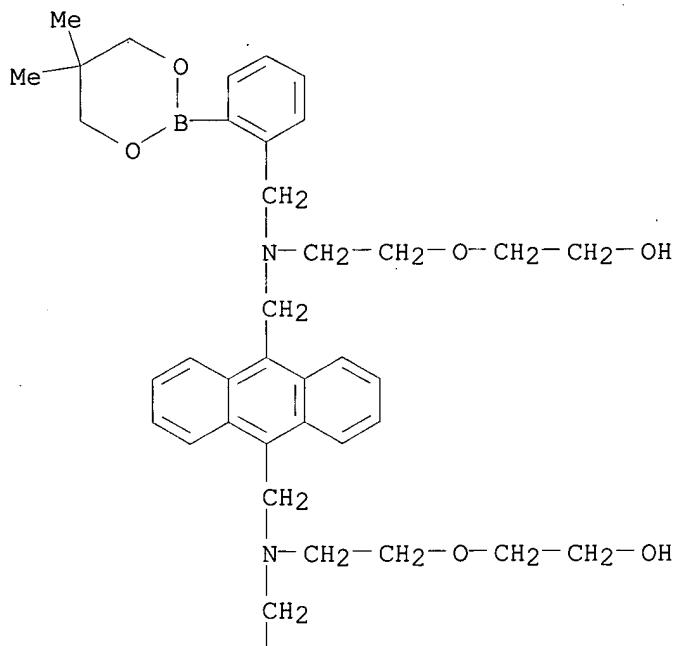
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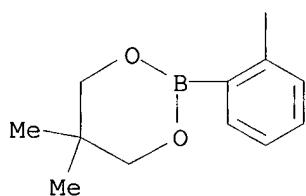
IT 399032-66-7P 399032-67-8P 443290-71-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a  
 beta-diketone)

RN 399032-66-7 HCAPLUS  
 CN Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]oxy]bis- (9CI) (CA INDEX NAME)

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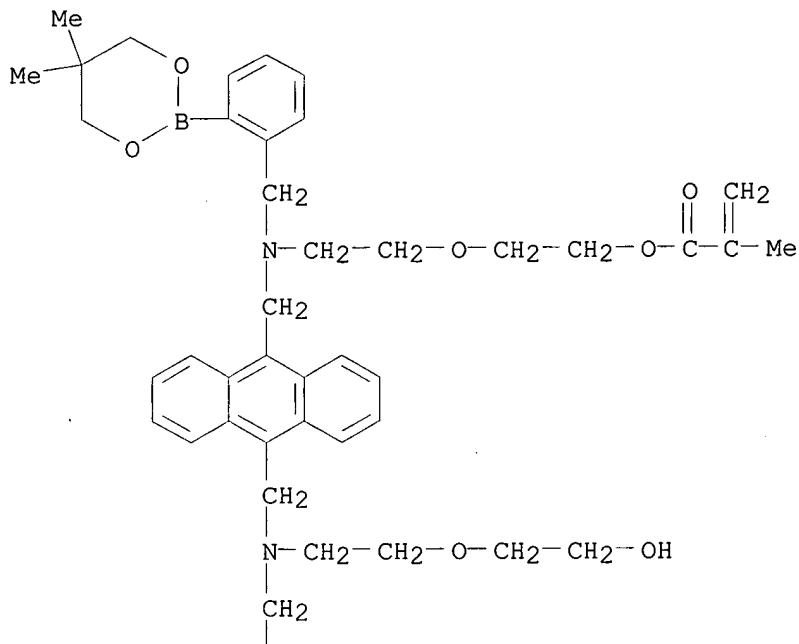
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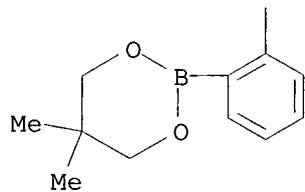
RN 399032-67-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[2-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

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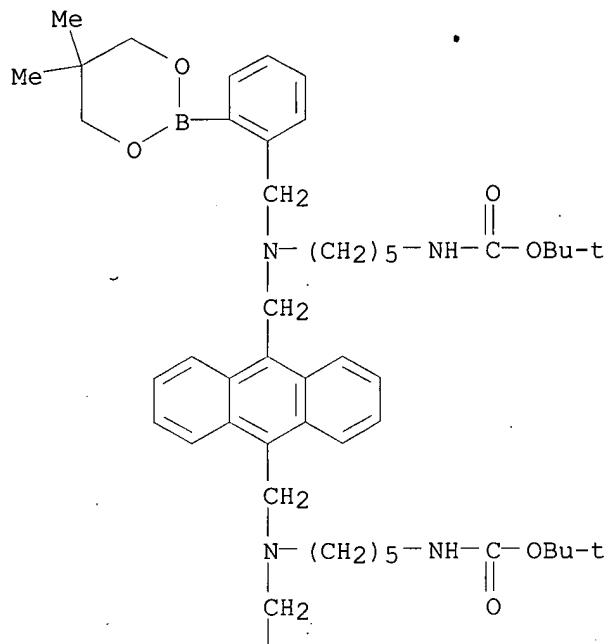
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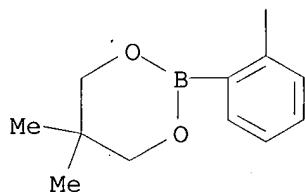
RN 443290-71-9 HCAPLUS

CN Carbamic acid, [9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-5,1-pentanediyli]bis-,  
bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

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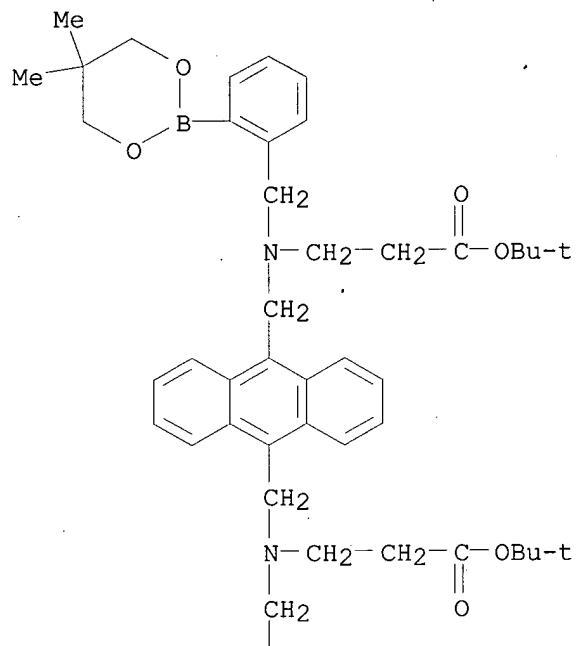
IT 440666-19-3P 441011-77-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a  
beta-diketone)

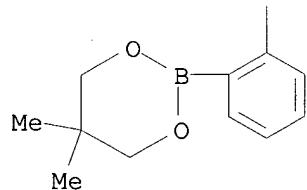
RN 440666-19-3 HCAPLUS

CN .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis[N-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

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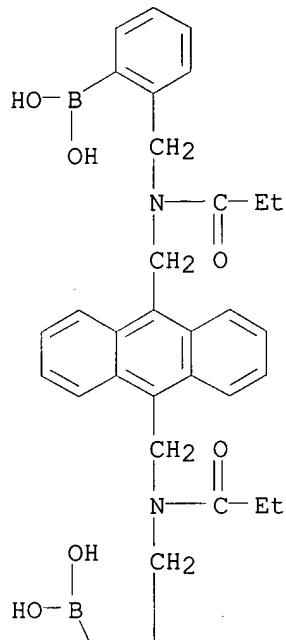
PAGE 2-A



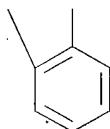
RN 441011-77-4 HCAPLUS

CN Boronic acid, [9,10-anthracenediylbis[methylene[(1-oxopropyl)imino]methylene-2,1-phenylene]bis- (9CI) (CA INDEX NAME)

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L52 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2002:522549 HCAPLUS  
 DN 137:90594  
 TI Detection of glucose in solutions also containing an alpha-hydroxy acid or  
 a beta-diketone  
 IN *Daniloff, George Y.; Kalivretenos, Aristotle G.;*  
*Nikolaitchik, Alexandre V.*  
 PA USA  
 SO U.S. Pat. Appl. Publ., 21 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM C12Q001-54  
 ICS G01N033-00  
 NCL 436095000  
 CC 9-16 (Biochemical Methods)  
 Section cross-reference(s): 63  
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002090734	A1	20020711	US 2001-754217	20010105
	US 2002127626	A1	20020912	US 2001-29184	20011228 <--
	WO 2002057788	A2	20020725	WO 2002-US199	20020104

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG

US 2003082663 A1 20030501 US 2002-187903 20020703

PRAI US 2001-754217 A2 20010105  
 US 2001-269887P P 20010221  
 US 2001-329746P P 20011018  
 US 2001-29184 A 20011228  
 US 2002-363885P P 20020314

OS MARPAT 137:90594

AB Compns. and methods for detg. the presence or concn. of glucose in a sample which may also contain an alpha-hydroxy acid or a beta-diketone. The method uses a compd. having at least two recognition elements for glucose, oriented such that the interaction between the compd. and glucose is more stable than the interaction between the compd. and the alpha-hydroxy acid or beta-diketone, such that the presence of the alpha-hydroxy acid or the beta-diketone does not substantially interfere with said detn.

ST detection glucose soln alpha hydroxy acid beta diketone

IT Ketones, analysis

RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (1,3-diketones; detection of glucose in solns. also contg.  
 alpha-hydroxy acid or a beta-diketone)

IT Functional groups

(Boronic acid; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Atoms

(Heteroatoms; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Medical goods

(Implantable; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Buffers

(Physiol.; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Functional groups

(Vicinal diol; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Carboxylic acids, uses

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (aliph., compds. contg.; detection of glucose in solns. also contg.  
 alpha-hydroxy acid or a beta-diketone)

IT Atoms

Blood analysis

Blood plasma

Blood serum

Body fluid

Cerebrospinal fluid

Composition

Concentration (condition)

Fluorescence

Fluorescence quenching

Fluorescent substances

Fluorometry

Hydrolysis

Immobilization, molecular

Indicators

Linking agents  
Lymph  
Molecules  
Reaction  
Saliva  
Samples  
Solids  
Solutions  
Stability  
Sweat  
Tear (ocular fluid)  
Urine analysis  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Polymers, analysis  
Silica gel, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Body fluid  
(interstitial; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Eye  
(intraocular fluid; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT Acids, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(oxo, .alpha.-; detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 50-99-7, D-Glucose, analysis  
RL: ANT (Analyte); ANST (Analytical study)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 541-50-4, analysis  
RL: ANT (Analyte); ARU (Analytical role, unclassified); PRP (Properties); ANST (Analytical study)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 79-09-4D, Propionic acid, compds. contg. 81-83-4D, Naphthalimide, compds. contg. 110-82-7D, Hexamethylene, compds. contg. 120-12-7D, Anthracene, compds. contg. 124-40-3D, Dimethylamine, compds. contg. 1333-74-0D, Hydrogen, compds. contg. 7440-44-0D, Carbon, compds. contg. 7704-34-9D, Sulfur, compds. contg. 7723-14-0D, Phosphorus, compds. contg. 7727-37-9D, Nitrogen, compds. contg. 7782-44-7D, Oxygen, compds. contg. 11120-48-2D, Telluric acid, compds. contg. 12134-79-1D, Germanic acid, compds. contg. 13464-58-9D, Arsenious acid, compds. contg. 13780-71-7D, Boronic acid, compds. contg. 15502-74-6D, Arsenite, compds. contg. 29256-93-7D, compds. contg. 53112-54-2D, Tellurate ion, compds. contg.  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 50-21-5, analysis  
RL: ARU (Analytical role, unclassified); PRP (Properties); ANST (Analytical study)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 79-41-4, Methacrylic acid, reactions 81-86-7 100-10-7, 4-Dimethylaminobenzaldehyde 110-18-9, N,N,N',N',- Tetramethylethylenediamine 110-26-9, n,n'-Methylenebisacrylamide 124-09-4, 1,6-Diaminohexane, reactions 128-37-0, reactions 130-22-3 623-27-8, 1,4-Benzenedicarboxaldehyde 645-36-3, Aminoacetaldehyde diethyl acetal 929-06-6, 2-(2-Aminoethoxy)ethanol 2680-03-7,

n,n-Dimethylacrylamide 5039-78-1, TMAMA 6192-52-5, p-Toluenesulfonic acid monohydrate 7087-68-5, Diea 10387-13-0, 9,10-Bis(chloromethyl)anthracene 24463-19-2, 9-Chloromethylanthracene 31922-97-1 51410-72-1, MAPTAC 57951-36-7 58620-93-2 72607-53-5, N-(3-Aminopropyl)methacrylamide hydrochloride 79238-88-3  
**399032-64-5** 399032-71-4 441011-76-3

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 108366-02-5P 259660-47-4P 399032-57-6P **399032-66-7P**  
**399032-67-8P** 399032-72-5P 399032-73-6P 440665-99-6P  
 440666-00-2P 440666-01-3P 440666-02-4P 440666-03-5P 440666-18-2P  
 441011-75-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT 399032-68-9P 440665-90-7P 440665-98-5P **440666-19-3P**  
 441011-74-1DP, derivs. **441011-77-4P**

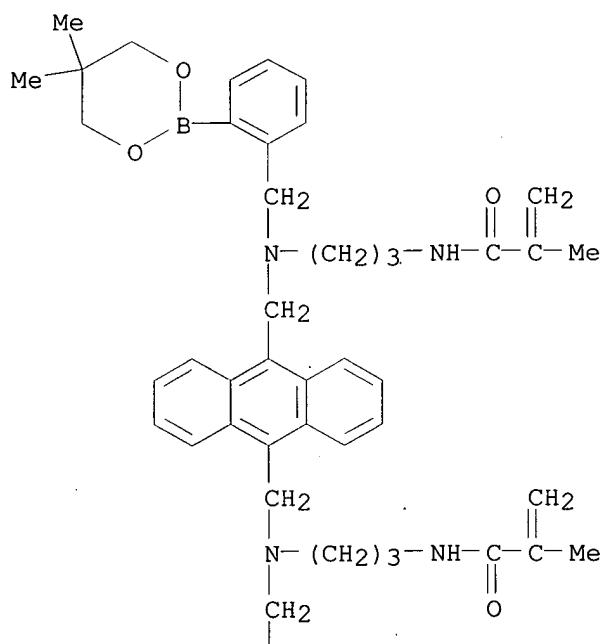
RL: SPN (Synthetic preparation); PREP (Preparation)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

IT **399032-64-5**  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
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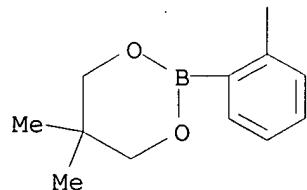
RN 399032-64-5 HCPLUS

CN 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]bis[2-methyl-(9CI) (CA INDEX NAME)

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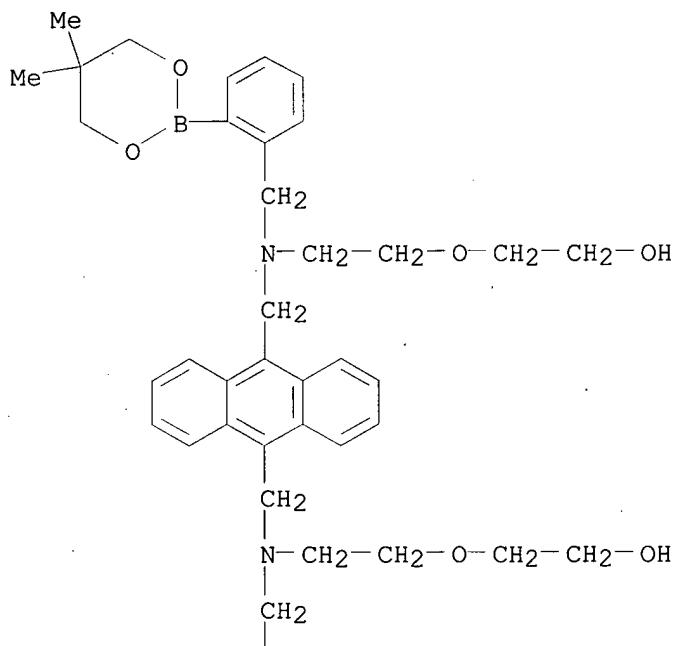
IT 399032-66-7P 399032-67-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

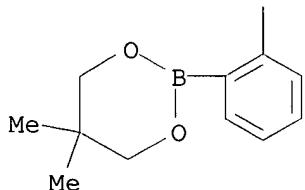
RN 399032-66-7 HCAPLUS

CN Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]bis- (9CI) (CA INDEX NAME)

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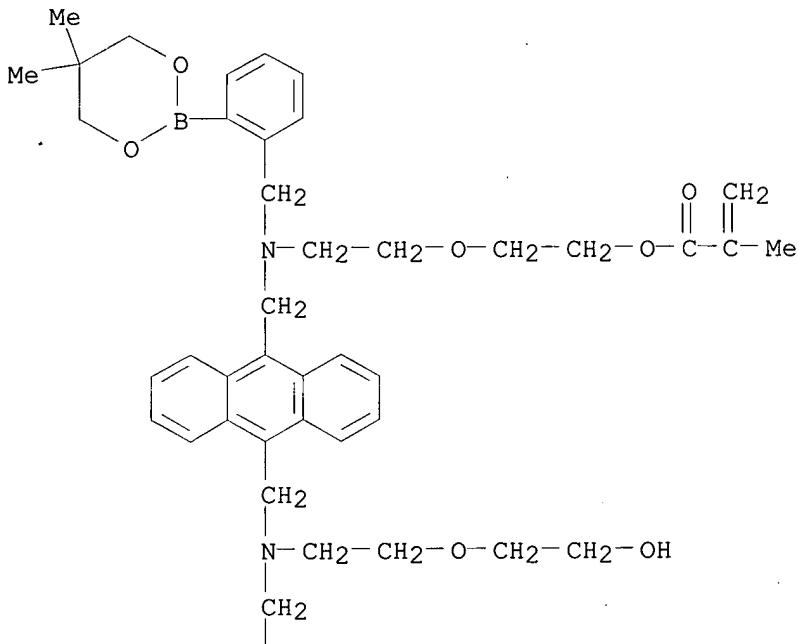
PAGE 2-A



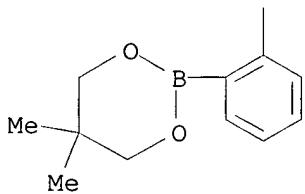
RN 399032-67-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[2-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



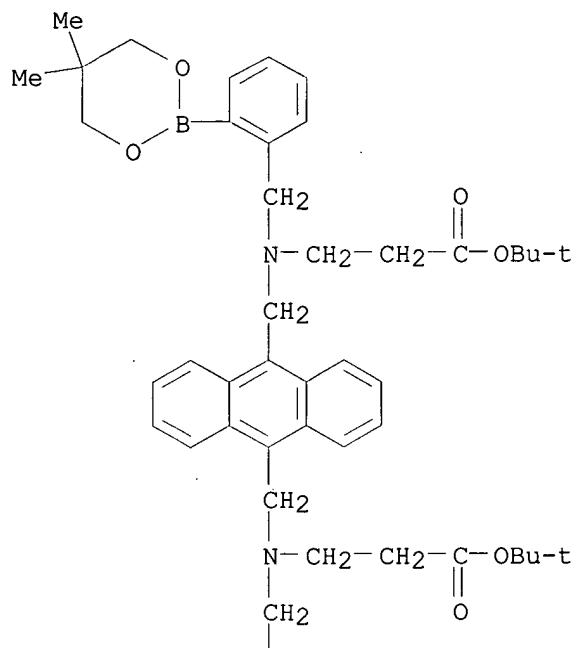
IT 440666-19-3P 441011-77-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(detection of glucose in solns. also contg. alpha-hydroxy acid or a beta-diketone)

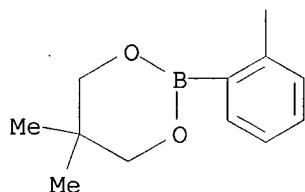
RN 440666-19-3 HCAPLUS

CN .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis[N-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

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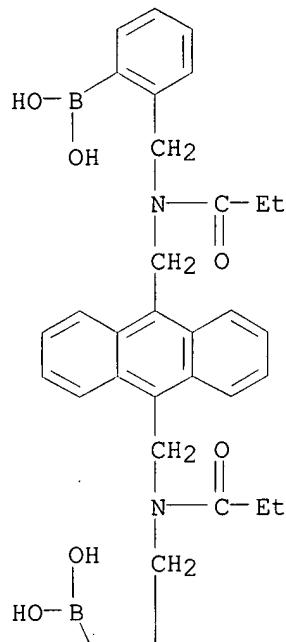
PAGE 2-A



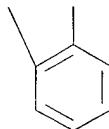
RN 441011-77-4 HCAPLUS

CN Boronic acid, [9,10-anthracenediylbis[methylene[(1-oxopropyl)imino]methylen-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

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PAGE 2-A



L52 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 2002:522152 HCAPLUS

DN 137:75531

TI Detection of analytes

IN Daniloff, George Y.; Kalivrentenos, Aristotle G.;  
Nikolaitchik, Alexandre V.; Ullman, Edwin F.

PA Sensors for Medicine and Science, Inc., USA

SO PCT Int. Appl., 81 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM G01N033-52

ICS G01N033-66

CC 9-5 (Biochemical Methods)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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	WO 2002054067	A3	20030522		

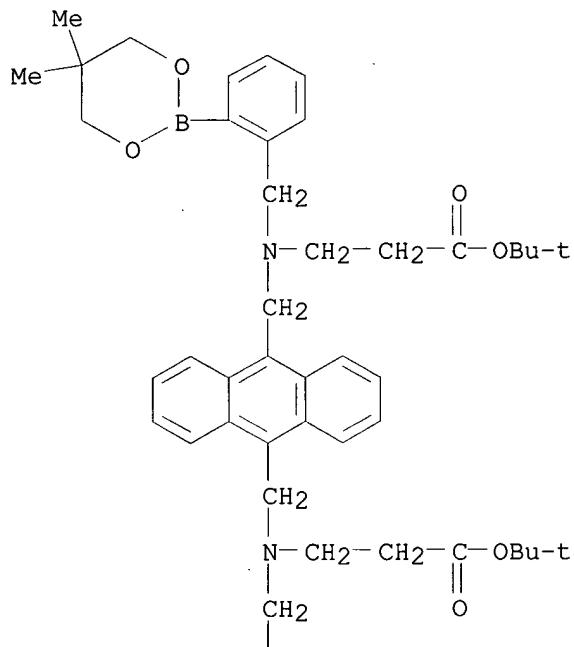
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PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,  
 UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,  
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 US 2002094586 A1 20020718 US 2001-754219 20010105  
 US 2002119581 A1 20020829 US 2001-28331 20011228  
 PRAI US 2001-754219 A 20010105  
 US 2001-28331 A 20011228  
 AB Disclosed are methods for detecting analytes, such as sugars, indicator systems which may undergo a mol. configurational change upon exposure to the analyte. The configurational change affects a detectable quality, such as fluorescence assocd. with the indicator system, thereby allowing detection of the presence or concn. of the analyte.  
 ST glucose detection fluorometry indicator  
 IT Blood analysis  
 Blood plasma  
 Blood serum  
 Buffers  
 Cerebrospinal fluid  
 Electron acceptors  
 Electron donors  
 Fluorescence quenching  
 Fluorometry  
 Lymph  
 Molecular recognition  
 Saliva  
 Sweat  
 Tear (ocular fluid)  
 Urine analysis  
 (detection of analytes)  
 IT Ligands  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (detection of analytes)  
 IT Body fluid  
 (interstitial; detection of analytes)  
 IT 50-99-7, Glucose, analysis  
 RL: ANT (Analyte); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); PROC (Process)  
 (detection of analytes)  
 IT 50-21-5, Lactic acid, analysis 87-69-4, Tartaric acid, analysis  
 111-42-2, Diethanolamine, analysis 6915-15-7, Malic acid  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (detection of analytes)  
 IT 259660-47-4P 440665-90-7P 440665-91-8P 440665-92-9P 440665-93-0P  
 440665-94-1P 440665-95-2P 440665-96-3P 440665-97-4P 440666-18-2P  
**440666-19-3P 440666-20-6P** 440666-21-7P 440666-22-8P  
 440666-24-0P 440666-26-2P 440666-27-3P  
 RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)  
 (detection of analytes)  
 IT 81-86-7 440665-98-5 440665-99-6 440666-00-2 440666-01-3  
 440666-02-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (detection of analytes)  
 IT 440666-03-5P 440666-04-6P 440666-05-7P 440666-06-8P 440666-07-9P  
 440666-08-0P 440666-09-1P 440666-10-4P 440666-11-5P 440666-13-7P  
 440666-15-9P 440666-16-0P 440666-17-1P 440666-28-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (detection of analytes)  
 IT **440666-19-3P 440666-20-6P**  
 RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST

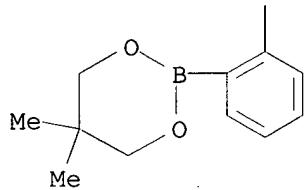
(Analytical study); PREP (Preparation)  
(detection of analytes)

RN 440666-19-3 HCPLUS  
CN .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis[N-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-, bis(1,1-dimethylethyl)ester (9CI) (CA INDEX NAME)

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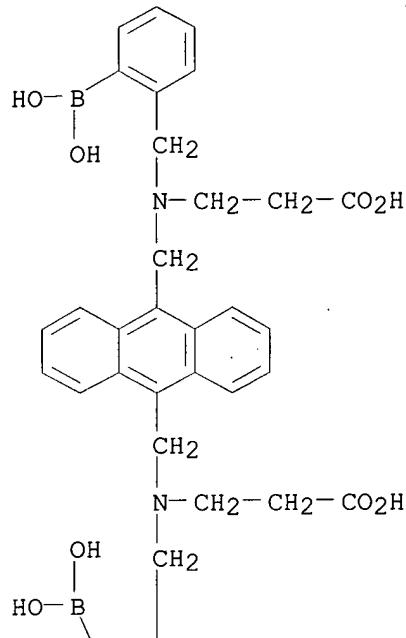


PAGE 2-A

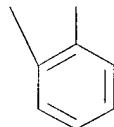


RN 440666-20-6 HCPLUS  
CN .beta.-Alanine, N,N'-[9,10-anthracenediylbis(methylene)]bis[N-[(2-boronophenyl)methyl]- (9CI) (CA INDEX NAME)

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L52 ANSWER 6 OF 7 HCPLUS COPYRIGHT 2003 ACS on STN  
 AN 2002:256773 HCPLUS  
 DN 136:291357  
 TI Detection of analytes in aqueous environments  
 IN Colvin, Arthur E.  
 PA **Sensors for Medicine and Science, Inc., USA**  
 SO U.S. Pat. Appl. Publ., 26 pp., Cont.-in-part of U. S. Ser. No. 632,624.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM G01N033-00  
 NCL 436095000  
 CC 9-14 (Biochemical Methods)  
 Section cross-reference(s): 61  
 FAN.CNT 2  
 PATENT NO. KIND DATE APPLICATION NO. DATE  
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 PI US 2002039793 A1 20020404 US 2001-920627 20010803  
 US 2003003592 A1 20030102 US 2002-193246 20020712  
 US 2003008408 A1 20030109 US 2002-193244 20020712  
 US 2003013204 A1 20030116 US 2002-193245 20020712  
 US 2003013202 A1 20030116 US 2002-193249 20020712  
 PRAI US 2000-632624 A2 20000804

AB The invention concerns indicator mols. for detecting the presence or concn. of an analyte in a medium, such as a liq., and to methods for achieving such detection. More particularly, the invention relates to copolymer macromols. contg. relatively hydrophobic indicator component monomers, and hydrophilic monomers, such that the macromol. is capable of use in an aq. environment.

ST analyte fluorescent indicator monomer hydrophilicity glucose acid hydrogel

IT Polycyclic compounds  
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)  
(arom. hydrocarbons; detection of analytes in aq. environments)

IT Polymerization  
(co-; detection of analytes in aq. environments)

IT Excimer  
Fluorescence  
Fluorescent indicators  
Hydrogels  
Hydrophilicity  
Indicators  
Optical properties  
Temperature  
pH  
(detection of analytes in aq. environments)

IT Hormones, animal, analysis  
Minerals, analysis  
Toxins  
RL: ANT (Analyte); ANST (Analytical study)  
(detection of analytes in aq. environments)

IT Oligosaccharides, analysis  
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)  
(detection of analytes in aq. environments)

IT Monomers  
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)  
(detection of analytes in aq. environments)

IT Rare earth complexes  
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)  
(detection of analytes in aq. environments)

IT Aromatic hydrocarbons, uses  
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)  
(polycyclic; detection of analytes in aq. environments)

IT Glycols, analysis  
RL: ANT (Analyte); ANST (Analytical study)  
(vicinal; detection of analytes in aq. environments)

IT Acids, analysis  
RL: ANT (Analyte); ANST (Analytical study)  
(.alpha.-hydroxy; detection of analytes in aq. environments)

IT Acids, analysis  
RL: ANT (Analyte); ANST (Analytical study)  
(.beta.-keto; detection of analytes in aq. environments)

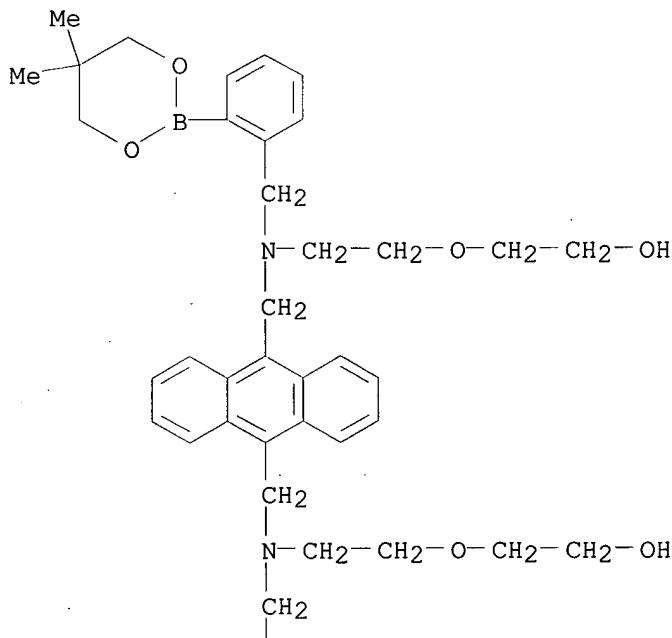
IT 124-38-9, Carbon dioxide, analysis 1333-74-0, Hydrogen, analysis  
3812-32-6, Carbonate, analysis 7440-09-7, Potassium, analysis  
7440-66-6, Zinc, analysis 7782-44-7, Oxygen, analysis  
RL: ANT (Analyte); ANST (Analytical study)  
(detection of analytes in aq. environments)

IT 50-99-7, D-Glucose, analysis  
RL: ANT (Analyte); ARU (Analytical role, unclassified); PRP (Properties); ANST (Analytical study)  
(detection of analytes in aq. environments)

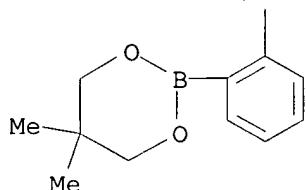
IT 408306-36-5D, derivs.  
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical

study); USES (Uses)  
 (detection of analytes in aq. environments)  
 IT 399032-58-7P **399032-66-7P** **399032-67-8P**  
**399032-69-0P**  
 RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (detection of analytes in aq. environments)  
 IT 399032-59-8P **399032-62-3P** **399032-64-5P** 399032-68-9P  
 399032-71-4P 399032-73-6P **408306-38-7P** **408306-39-8P**  
**408306-40-1P** **408306-41-2P** **408306-42-3P**  
 408306-50-3P  
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
 (detection of analytes in aq. environments)  
 IT 50-21-5, analysis  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (detection of analytes in aq. environments)  
 IT 108366-02-5P 399032-57-6P 399032-60-1P 399032-63-4P 408306-43-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (detection of analytes in aq. environments)  
 IT 2680-03-7, N,N-Dimethylacrylamide  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (hydrogel; detection of analytes in aq. environments)  
 IT **399032-66-7P** **399032-67-8P** **399032-69-0P**  
 RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (detection of analytes in aq. environments)  
 RN 399032-66-7 HCAPLUS  
 CN Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]oxy]bis- (9CI) (CA INDEX NAME)

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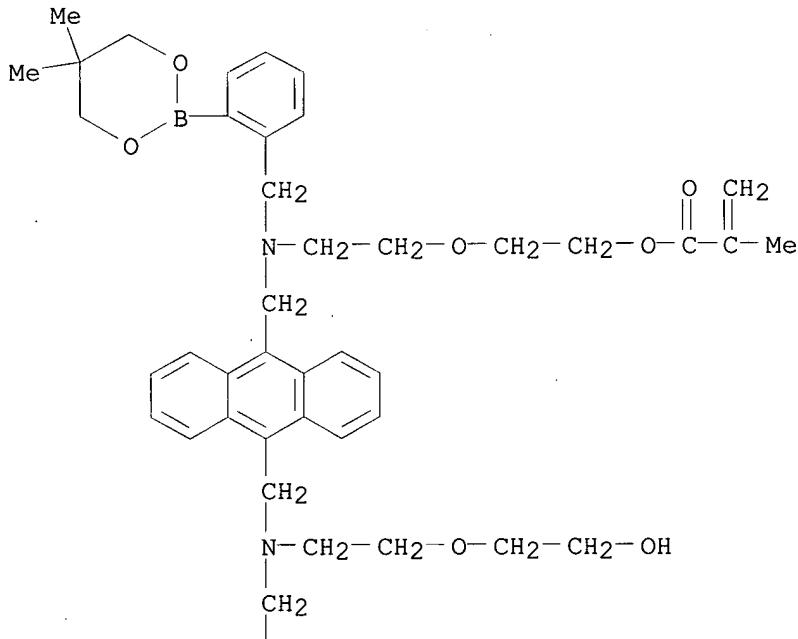
PAGE 2-A



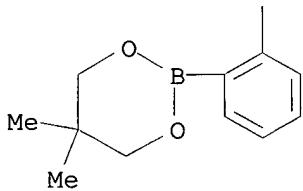
RN 399032-67-8 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[2-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

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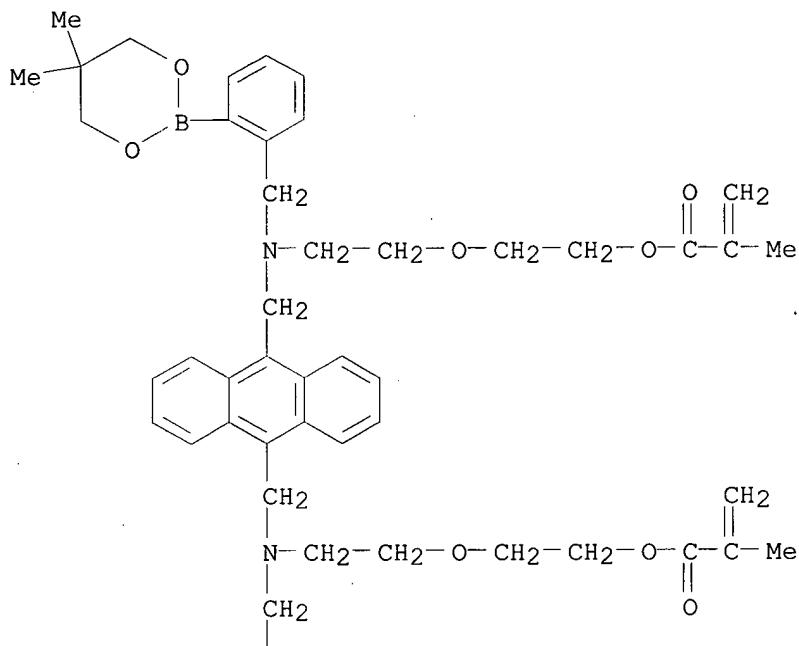


RN 399032-69-0 HCAPLUS

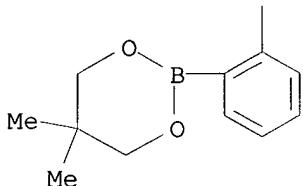
CN 2-Propenoic acid, 2-methyl-, 9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediylxy-

2,1-ethanediyl] ester (9CI) (CA INDEX NAME)

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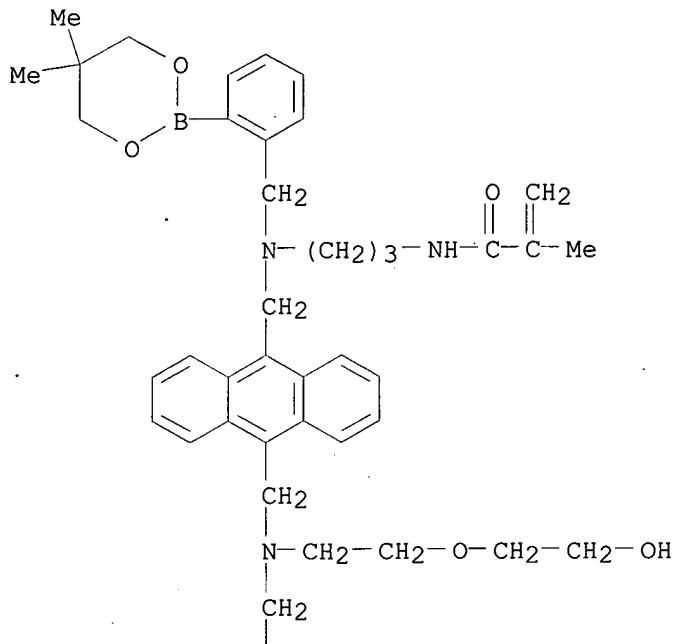
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 408306-39-8P 408306-40-1P 408306-41-2P  
**408306-42-3P**

RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
 (detection of analytes in aq. environments)

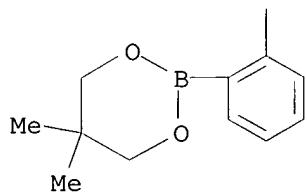
RN 399032-62-3 HCAPLUS

CN 2-Propenamide, N-[3-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]propyl]-2-methyl- (9CI) (CA INDEX NAME)

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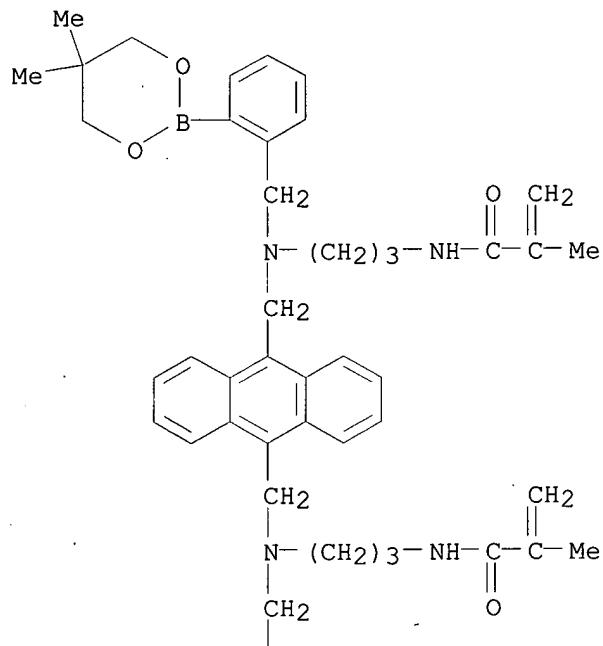


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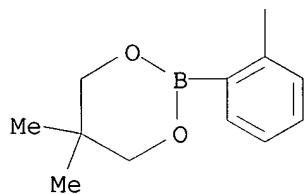


RN 399032-64-5 HCAPLUS  
CN 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]bis[2-methyl-(9CI) (CA INDEX NAME)

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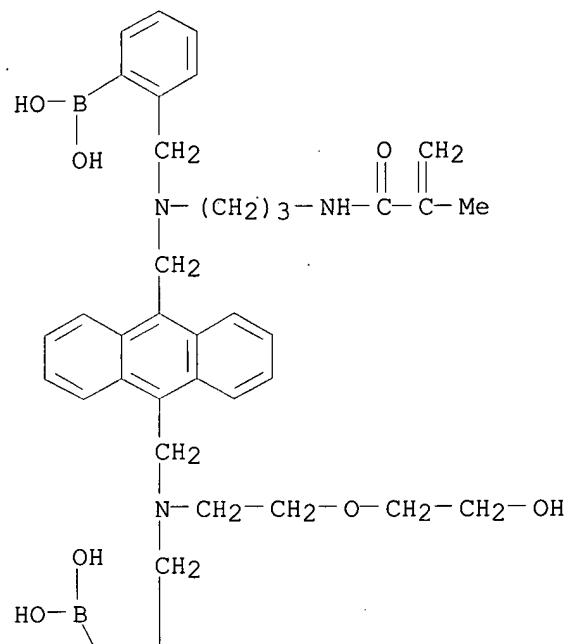
PAGE 2-A



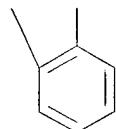
RN 408306-38-7 HCAPLUS

CN Boronic acid, [2-[[[[10-[[[(2-boronophenyl)methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracyenyl]methyl][3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]amino]methyl]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

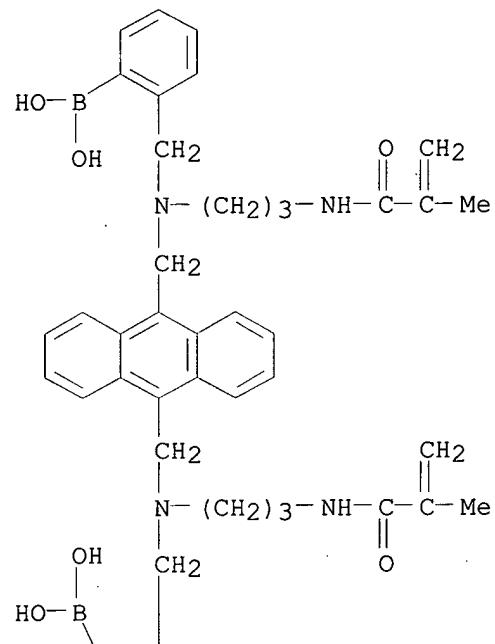


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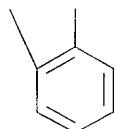


RN 408306-39-8 HCAPLUS  
 CN Boronic acid, [9,10-anthracenediylbis[methylene[[3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]imino]methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A

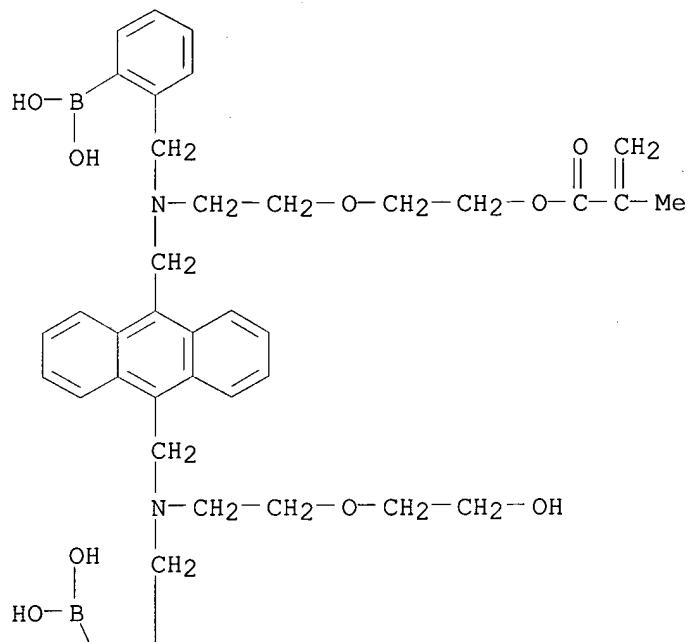


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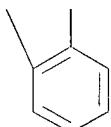


RN 408306-40-1 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 2-[2-[(2-boronophenyl)methyl][[10-[(2-boronophenyl)methyl][2-(2-hydroxyethoxy)ethyl]amino)methyl]-9-anthracenyl)methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



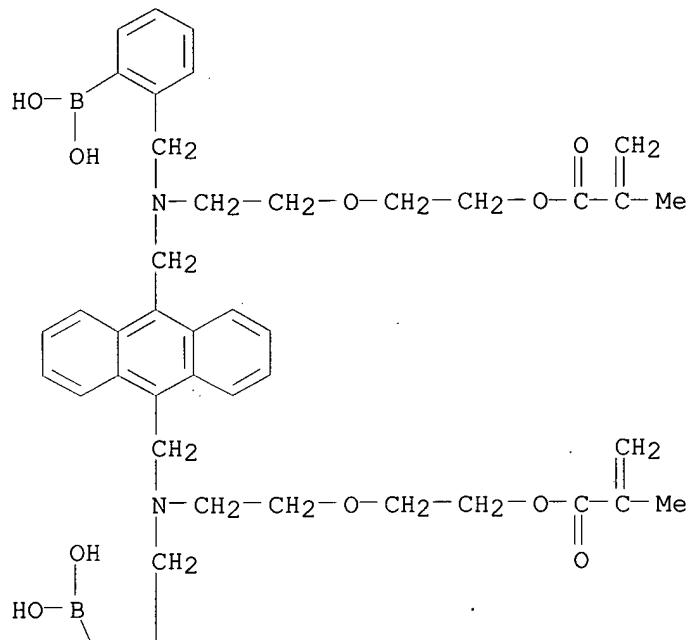
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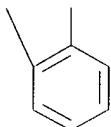
RN 408306-41-2 HCAPLUS

CN Boronic acid, [9,10-anthracenediylbis[methylene[[2-[2-[ (2-methyl-1-oxo-2-propenyl)oxy]ethoxy]ethyl]imino]methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



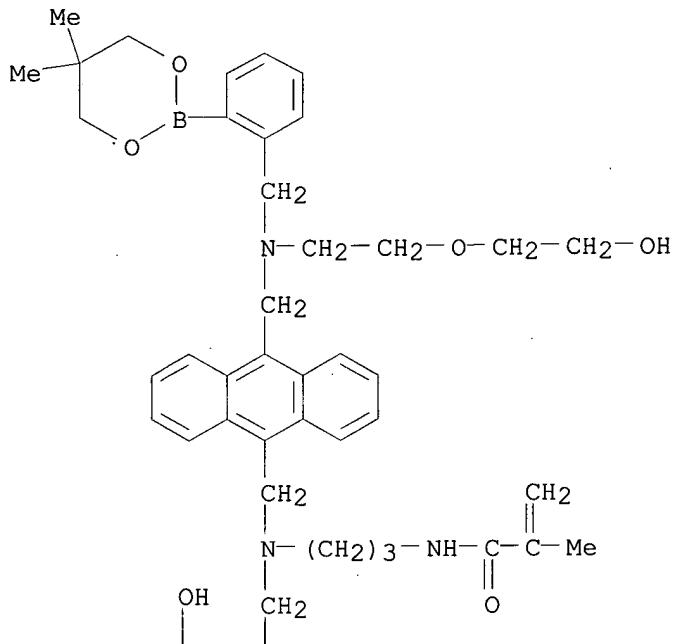
PAGE 2-A



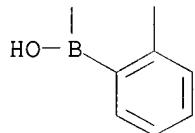
RN 408306-42-3 HCPLUS

CN Boronic acid, [2-[[[[10-[[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl][3-[(2-methyl-1-oxo-2-propenyl)amino]propyl]amino]methyl]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



L52 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2002:123016 HCAPLUS  
 DN 136:184293  
 TI Detection of analytes in aqueous environments using fluorescent indicators  
 IN Colvin, Arthur E., Jr.  
 PA Sensors for Medicine and Science, Inc., USA  
 SO PCT Int. Appl., 72 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C07F005-02

ICS C07F005-04; G01N033-66

CC 35-4 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 61

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002012251	A1	20020214	WO 2001-US24294	20010803
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ,				

VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
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 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,  
 BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 AU 2001078145 A5 20020218 AU 2001-78145 20010803  
 BR 2001012871 A 20030422 BR 2001-12871 20010803  
 EP 1307464 A1 20030507 EP 2001-956112 20010803  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 US 2003003592 A1 20030102 US 2002-193246 20020712  
 US 2003008408 A1 20030109 US 2002-193244 20020712  
 US 2003013204 A1 20030116 US 2002-193245 20020712  
 US 2003013202 A1 20030116 US 2002-193249 20020712  
 PRAI US 2000-632624 A 20000804  
 WO 2001-US24294 W 20010803  
 AB The indicator copolymer mols. are for detecting the presence or concn. of  
 an analyte in a medium, such as a liq. Copolymer macromols. contg.  
 relatively hydrophobic indicator component monomers, and hydrophilic  
 monomers are capable of dispersing in an aq. environment.  
 ST fluorescent indicator polymer glucose soln  
 IT Fluorescent indicators  
     (for detection of analytes in aq. environments)  
 IT 50-99-7, Glucose, analysis  
 RL: ANT (Analyte); ANST (Analytical study)  
     (fluorescent monomers and polymers for detection of analytes in aq.  
     environments)  
 IT 130-22-3P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
     (Reactant or reagent)  
     (fluorescent monomers and polymers for detection of analytes in aq.  
     environments)  
 IT 399032-65-6P 399032-68-9P 399032-70-3P 399032-74-7P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
     use); PREP (Preparation); USES (Uses)  
     (fluorescent monomers and polymers for detection of analytes in aq.  
     environments)  
 IT 79-41-4, Methacrylic acid, reactions 929-06-6, 2-(2-Aminoethoxy)ethanol  
 10387-13-0, 9,10-Bis(chloromethyl)anthracene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
     (fluorescent monomers and polymers for detection of analytes in aq.  
     environments)  
 IT 24463-19-2, 9-Chloromethylanthracene 72607-53-5, N-(3-  
     Aminopropyl)methacrylamide hydrochloride 166821-88-1,  
     2,2-Dimethylpropane-1,3-diy1[o-(bromomethyl)phenyl]boronate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
     (fluorescent polymers for detection of analytes in aq. environments)  
 IT 399032-59-8P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
     use); PREP (Preparation); USES (Uses)  
     (for detection of analytes in aq. environments)  
 IT 399032-60-1P 399032-61-2P 399032-66-7P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
     (Reactant or reagent)  
     (intermediate; fluorescent monomers and polymers for detection of  
     analytes in aq. environments)  
 IT 399032-63-4P 399032-64-5P 399032-67-8P  
 399032-69-0P 399032-71-4P 399032-72-5P 399032-73-6P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
     (Reactant or reagent)  
     (prop. and polymn.; fluorescent monomers and polymers for detection of  
     analytes in aq. environments)  
 IT 399032-62-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)

(prep. and polymn.; fluorescent monomers and polymers for detection of analytes in aq. environments)

IT 399032-57-6P 399032-58-7P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (prep. and polymn.; fluorescent polymers for detection of analytes in aq. environments)

IT 623-27-8, 1,4-Benzenedicarboxaldehyde  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with aminopropyl methacrylamide; fluorescent monomers and polymers for detection of analytes in aq. environments)

IT 108366-02-5P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (reaction with boronic acid ester; fluorescent monomers and polymers for detection of analytes in aq. environments)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Gen Electric Co Plc; EP 0430510 A 1991 HCPLUS
- (2) Gruber, H; BBA - GENERAL SUBJECTS 1998, V1381(2), P203 HCPLUS
- (3) Horng, W; US 5661040 A 1997 HCPLUS
- (4) Hurskainen, P; US 5256535 A 1993 HCPLUS
- (5) Nezu, T; BIOMATERIALS 2000, V21(4), P415 HCPLUS
- (6) Sensors For Medicine And Scien; WO 9946600 A 1999 HCPLUS
- (7) Wilken, R; MACROMOLECULAR: RAPID COMMUNICATIONS 1997, V18(8), P659 HCPLUS

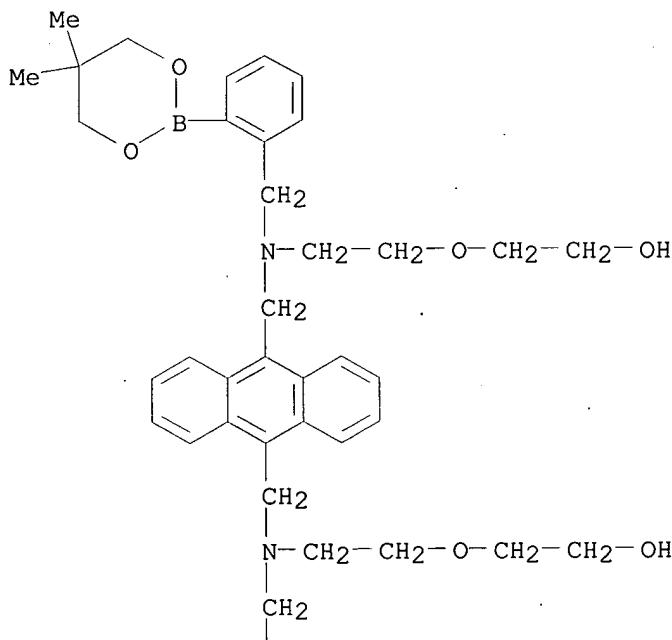
IT 399032-66-7P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
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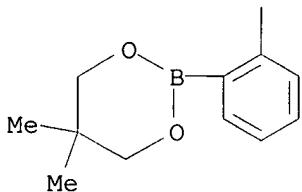
RN 399032-66-7 HCPLUS

CN Ethanol, 2,2'-[9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl]bis- (9CI) (CA INDEX NAME)

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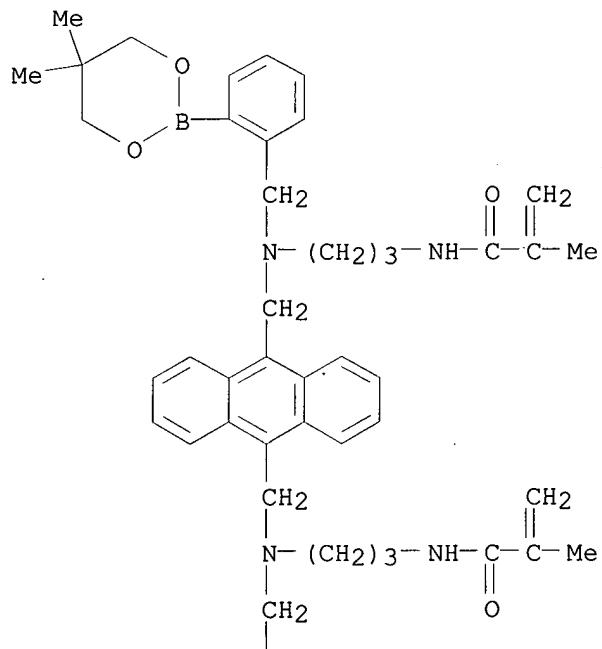
IT 399032-64-5P 399032-67-8P 399032-69-0P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
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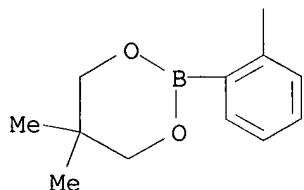
RN 399032-64-5 HCAPLUS

CN 2-Propenamide, N,N'-[9,10-anthracenediylbis[methylene[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-3,1-propanediyl]]bis[2-methyl- (9CI) (CA INDEX NAME)

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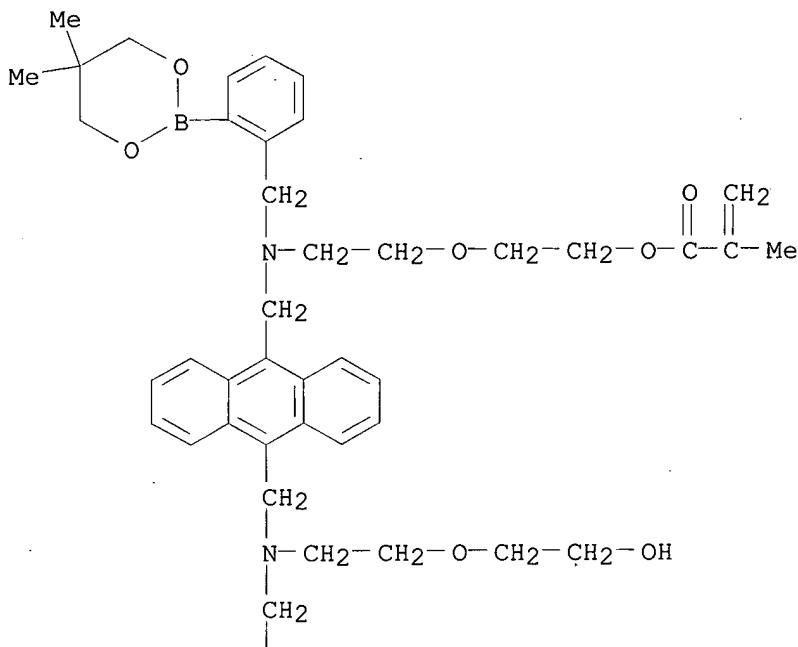
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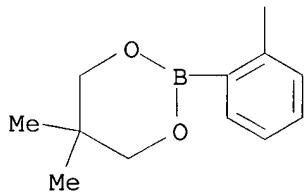
RN 399032-67-8 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[2-[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]ethoxy]ethyl ester (9CI) (CA INDEX NAME)

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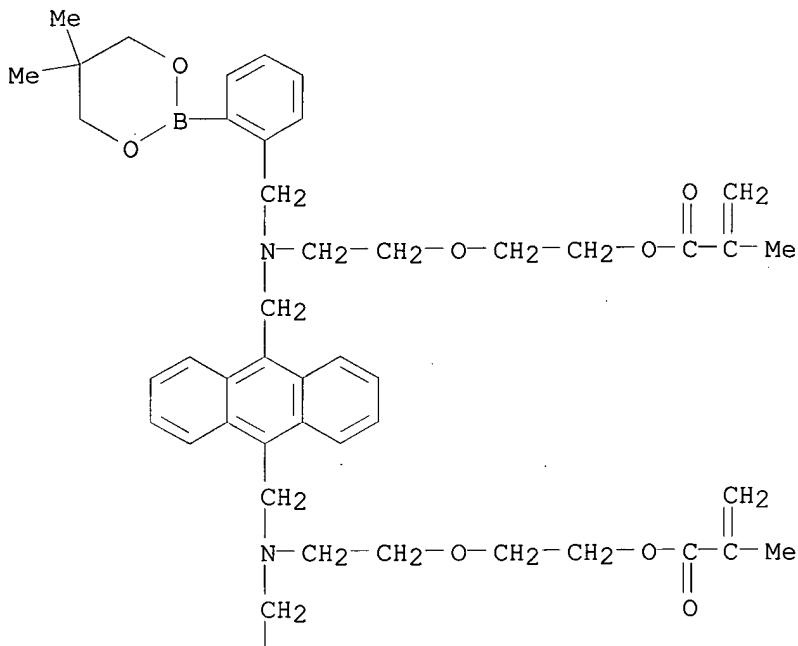
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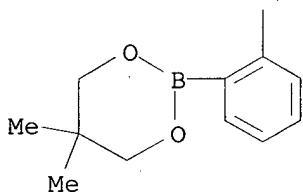
RN 399032-69-0 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 9,10-anthracenediylbis[methylene[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]imino]-2,1-ethanediyl ester (9CI) (CA INDEX NAME)

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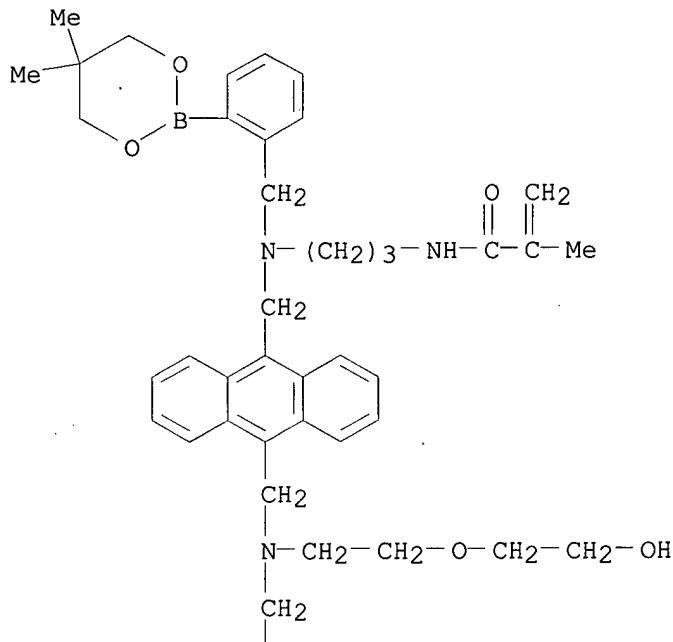
IT 399032-62-3

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (prep. and polymn.; fluorescent monomers and polymers for detection of  
 analytes in aq. environments)

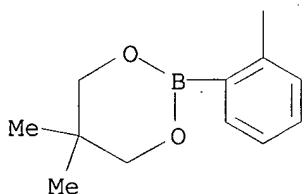
RN, 399032-62-3 HCPLUS

CN 2-Propenamide, N-[3-[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][[10-[[[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl][2-(2-hydroxyethoxy)ethyl]amino]methyl]-9-anthracenyl]methyl]amino]propyl]-2-methyl- (9CI) (CA INDEX NAME)

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DICTIONARY FILE UPDATES: 5 AUG 2003 HIGHEST RN 561276-83-3

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

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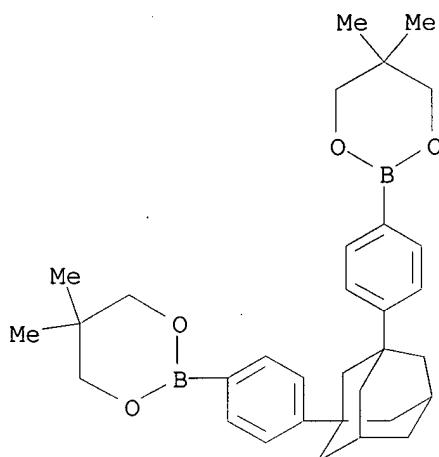
Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP

PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d ide can tot 173

L73 ANSWER 1 OF 4 REGISTRY COPYRIGHT 2003 ACS on STN  
 RN 269412-04-6 REGISTRY  
 CN 1,3,2-Dioxaborinane, 2,2'-(tricyclo[3.3.1.13,7]decane-1,3-diyl)di-4,1-phenylene)bis[5,5-dimethyl- (9CI) (CA INDEX NAME)  
 MF C32 H42 B2 O4  
 CI COM  
 SR CA  
 LC STN Files: CA, CAPLUS, USPATFULL



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 3 REFERENCES IN FILE CAPLUS (1947 TO DATE)

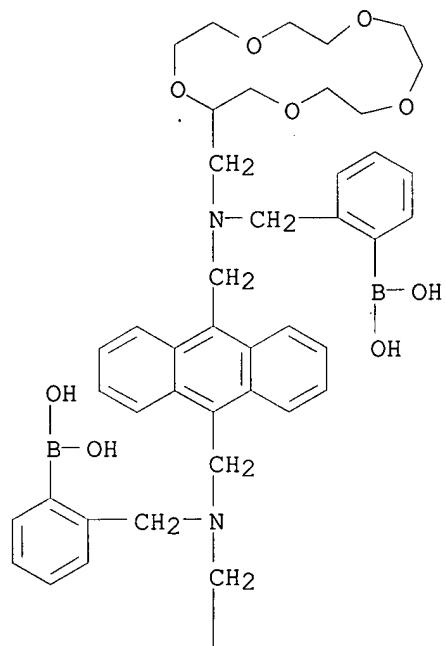
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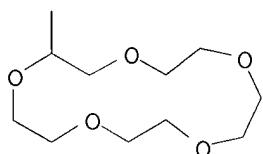
REFERENCE 3: 132:348053

L73 ANSWER 2 OF 4 REGISTRY COPYRIGHT 2003 ACS on STN  
 RN 168558-56-3 REGISTRY  
 CN Boronic acid, [9,10-anthracenediylbis[methylene[[2,3,5,6,8,9,11,12,14,15-decahydro-1,4,7,10,13-pentaoxacyclopentadec-2-yl)methyl]imino]methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)  
 MF C52 H70 B2 N2 O14  
 SR CA  
 LC STN Files: CA, CAPLUS, CASREACT

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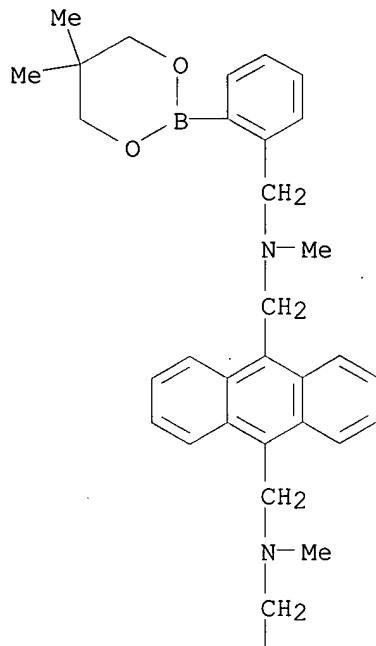
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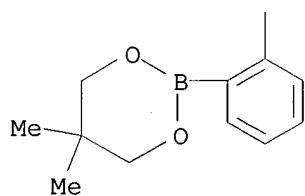
REFERENCE 1: 123:228252

L73 ANSWER 3 OF 4 REGISTRY COPYRIGHT 2003 ACS on STN  
 RN **166821-90-5** REGISTRY  
 CN 9,10-Anthracenedimethanamine, N,N'-bis[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-N,N'-dimethyl- (9CI) (CA INDEX NAME)  
 MF C42 H50 B2 N2 O4  
 SR CA  
 LC STN Files: CA, CAPLUS

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2 REFERENCES IN FILE CA (1947 TO DATE)  
 2 REFERENCES IN FILE CAPLUS (1947 TO DATE)

REFERENCE 1: 131:41664

REFERENCE 2: 123:138027

L73 ANSWER 4 OF 4 REGISTRY COPYRIGHT 2003 ACS on STN

RN 162254-07-1 REGISTRY

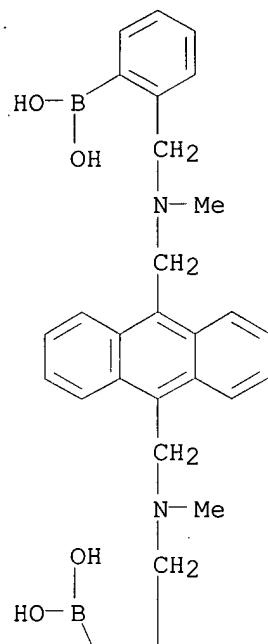
CN Boronic acid, [9,10-anthracenediylbis[methylene(methylimino)methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

MF C32 H34 B2 N2 O4

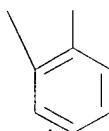
SR CA

LC STN Files: CA, CAPLUS, USPATFULL

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 REFERENCE 2: 135:223593  
 REFERENCE 3: 134:219381  
 REFERENCE 4: 125:80937  
 REFERENCE 5: 123:334134  
 REFERENCE 6: 123:280304  
 REFERENCE 7: 123:138027

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CA INDEXING COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

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L76 ANSWER 1 OF 3 USPATFULL on STN  
AN 2002:71071 USPATFULL  
TI Minimally invasive methods for measuring analytes in vivo  
IN Bell, Michael L., Fullerton, CA, United States  
McNeal, Jack D., Long Beach, CA, United States  
PA Beckman Coulter, Inc., Fullerton, CA, United States (U.S. corporation)  
PI US 6366793 B1 20020402  
AI US 1999-393738 19990910 (9)  
DT Utility  
FS GRANTED  
EXNAM Primary Examiner: Winakur, Eric F.  
LREP May, William H., Grant, Arnold, Sheldon & Mak  
CLMN Number of Claims: 31  
ECL Exemplary Claim: 1  
DRWN 5 Drawing Figure(s); 3 Drawing Page(s)  
LN.CNT 615  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Minimally invasive methods for measuring an analyte, such as glucose, contained in the interstitial fluid of a body are provided. The methods include the steps of.

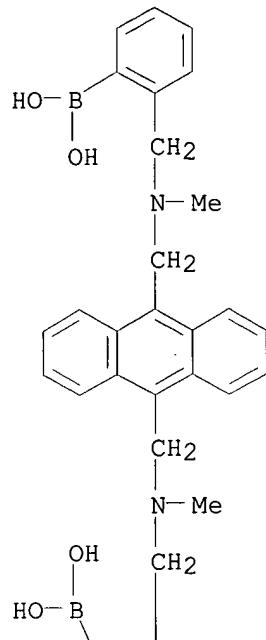
- (a) providing at least one sensor particle capable of generating a detectable analyte signal in responding to the analyte concentration of the body,
- (b) placing the sensor particle into the skin of the body for allowing the sensor particle to be in contact with the interstitial fluid of the body to generate the detectable analyte signal,
- (c) detecting the generated analyte signal, and
- (d) determining the concentration of the analyte contained in the interstitial fluid.

The sensor particles may be made to be responsive to an analyte such as glucose concentration contained in a body fluid by including a photo-induced electron transfer receptor specific for the analyte in the sensor particle.

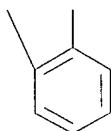
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 162254-07-1  
    (minimally invasive methods for measuring analytes in vivo)  
RN 162254-07-1 USPATFULL  
CN Boronic acid, [9,10-anthracenediylbis[methylene(methylimino)methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

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L76 ANSWER 2 OF 3 USPATFULL on STN  
 AN 2001:121179 USPATFULL  
 TI Electroluminescent devices having phenylanthracene-based polymers  
 IN Zheng, Shiying, Rochester, NY, United States  
     Shi, Jianmin, Webster, NY, United States  
     Klubek, Kevin P., Webster, NY, United States  
 PA Eastman Kodak Company, Rochester, NY, United States (U.S. corporation)  
 PI US 6268072 B1 20010731  
 AI US 1999-410767 19991001 (9)  
 DT Utility  
 FS GRANTED  
 EXNAM Primary Examiner: Yamnitzky, Marie; Assistant Examiner: Xu, Ling  
 LREP Owens, Raymond L.  
 CLMN Number of Claims: 8  
 ECL Exemplary Claim: 1  
 DRWN 6 Drawing Figure(s); 3 Drawing Page(s)  
 LN.CNT 1202  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
 AB An electroluminescent device comprises an anode, a cathode, and polymer luminescent materials disposed between the anode and cathode, the polymeric luminescent materials includes 9-(4-adamantanyl)phenyl)-10-phenylanthracene-based polymers of the following formula: ##STR1##

wherein:

substituents R, R.sub.1, R.sub.2, R.sub.3, R.sub.4 and R.sub.5 are each individually hydrogen, or alkyl or alkoxy of from 1 to 24 carbon atoms; aryl or substituted aryl of from 6 to 28 carbon atoms; or heteroaryl or substituted heteroaryl of from 4 to 40 carbons; or F, Cl, Br; or a cyano group; or a nitro group; wherein

the ratio of n/(m+n) is between 0 to 1 wherein m and n are integers but m cannot be 0; and Y are divalent linking groups.

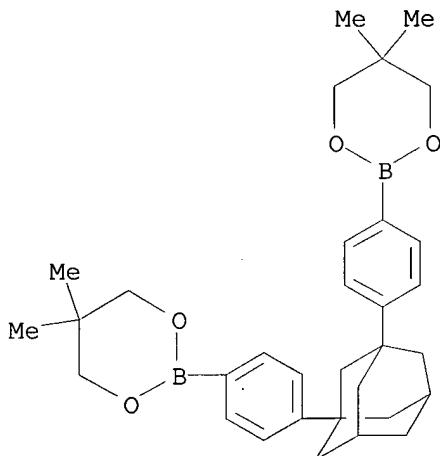
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 269412-04-6P

(org. electroluminescent devices using 9-(4-adamantanyl)phenyl)-10-phenylanthracene-based polymers)

RN 269412-04-6 USPATFULL

CN 1,3,2-Dioxaborinane, 2,2'-(tricyclo[3.3.1.13,7]decane-1,3-diyl)-4,1-phenylene)bis[5,5-dimethyl- (9CI) (CA INDEX NAME)



L76 ANSWER 3 OF 3 USPATFULL on STN

AN 96:26884 USPATFULL

TI Fluorescent compound suitable for use in the detection of saccharides

IN James, Tony, Fukuoka, Japan

Sandanayake, Saman, Fukuoka, Japan

Shinkai, Seiji, Fukuoka, Japan

PA Research Development Corporation of Japan, Saitama, Japan (non-U.S. corporation).

PI US 5503770 19960402

AI US 1994-336236 19941107 (8)

PRAI JP 1993-302385 19931107

JP 1994-147061 19940606

DT Utility

FS Granted

EXNAM Primary Examiner: Bonner, C. Melissa

LREP Wenderoth, Lind & Ponack

CLMN Number of Claims: 6

ECL Exemplary Claim: 1

DRWN 4 Drawing Figure(s); 4 Drawing Page(s)

LN.CNT 364

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Disclosed is a fluorescent compound of a molecular structure comprising a fluorophore, at least one phenylboronic acid moiety, and at least one amine-providing nitrogen atom where the nitrogen atom is disposed in the

vicinity of the phenylboronic acid moiety so as to interact intermolecularly with the boronic acid. The compound emits fluorescence of a high intensity upon binding to saccharide(s), and is therefore suitable for use in the detection of saccharide(s).

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

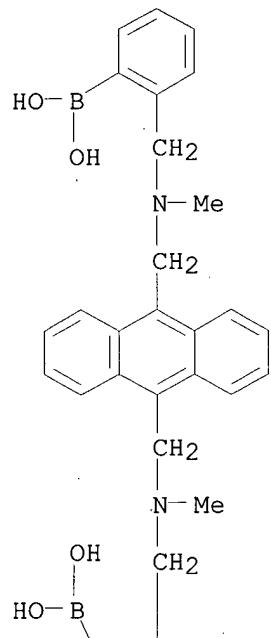
IT 162254-07-1

(fluorescent phenylboronic acids for detection of saccharides)

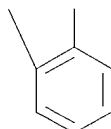
RN 162254-07-1 USPATFULL

CN Boronic acid, [9,10-anthracenediylbis[methylene(methylimino)methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

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FILE LAST UPDATED: 5 Aug 2003 (20030805/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L80 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2002:134552 HCAPLUS  
DN 136:321497  
TI Rhenium bipyridine complexes for the recognition of glucose  
AU Cary, Douglas R.; Zaitseva, Natasha P.; Gray, Kelsey; O'Day, Kira E.; Darrow, Christopher B.; Lane, Stephen M.; Peyser, Thomas A.; Satcher, Joe H., Jr.; Van Antwerp, William P.; Nelson, A. J.; Reynolds, John G.  
CS University of California, Lawrence Livermore National Laboratory, Livermore, CA, 94551, USA  
SO Inorganic Chemistry (2002), 41(6), 1662-1669  
CODEN: INOCAJ; ISSN: 0020-1669  
PB American Chemical Society  
DT Journal  
LA English  
CC 9-5 (Biochemical Methods)  
AB Bipyridine ligands contg. pendant Me, amino, and amino-boronic acid groups were synthesized. Coordination complexes of these ligands with rhenium were prep'd. straightforwardly and in good yield. The fluorescence behavior of the Re complexes was studied as a function of pH and exposure to various concns. of glucose. The Me bipyridine complex showed no change in fluorescence with pH, the amino deriv. showed a rapid decrease from low pH to neutral, and the amino-boronic deriv. showed little change from pH 4 to 10. Fluorescence quenching was obsd. at high pH as expected on the basis of a photoinduced electron transfer (PET) signaling mechanism. This behavior can be explained on the basis of the first oxidn. and redn. potentials of these complexes. Glucose testing showed a significant dependence on the solvent system used. In pure methanol, the rhenium boronate complex exhibited a 55% fluorescence intensity increase upon increasing glucose concn. from 0 to 400 mg/dL. However, in 50 vol % methanol/phosphate buffered saline, none of the complexes showed significant response in the glucose range of physiol. interest.  
ST rhenium bipyridine complex recognition glucose  
IT Diabetes mellitus  
Sensors  
pH  
    (rhenium bipyridine complexes for recognition of glucose)  
IT 50-99-7, Glucose, analysis  
RL: ANT (Analyte); ANST (Analytical study)  
    (rhenium bipyridine complexes for recognition of glucose)  
IT 99666-78-1P 156742-45-9P 162254-07-1P 330671-19-7P  
330671-21-1P 330671-22-2P 330671-24-4P 330671-26-6P  
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)  
    (rhenium bipyridine complexes for recognition of glucose)  
IT 100-39-0P 103-67-3P 1134-35-6P 14099-01-5P 81998-05-2P  
95752-88-8P 104704-09-8P 166821-88-1P 330649-41-7P 330649-42-8P  
330649-43-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(rhenium bipyridine complexes for recognition of glucose)

RE.CNT 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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IT 162254-07-1P

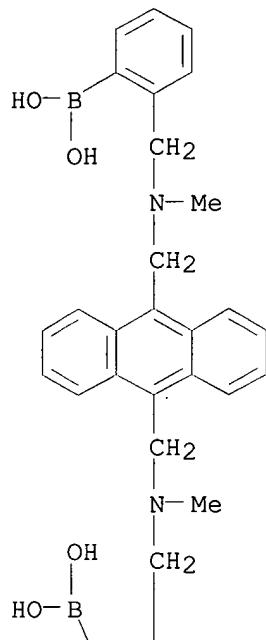
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)

(rhenium bipyridine complexes for recognition of glucose)

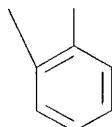
RN 162254-07-1 HCPLUS

CN Boronic acid, [9,10-anthracenediylbis[methylene(methylimino)methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



L80 ANSWER 2 OF 12 HCPLUS COPYRIGHT 2003 ACS on STN  
 AN 2001:497867 HCPLUS  
 DN 135:223593  
 TI Evaluation of two synthetic glucose probes for fluorescence-lifetime-based sensing  
 AU DiCesare, Nicolas; Lakowicz, Joseph R.  
 CS Center for Fluorescence Spectroscopy, Department of Biochemistry and Molecular Biology, University of Maryland at Baltimore, Baltimore, MD, 21201, USA  
 SO Analytical Biochemistry (2001), 294(2), 154-160  
 CODEN: ANBCA2; ISSN: 0003-2697  
 PB Academic Press  
 DT Journal  
 LA English  
 CC 9-5 (Biochemical Methods)  
 AB We evaluated two anthracene derivs. with covalently attached boronic acid groups for fluorescence-lifetime-based sensing of glucose. These anthracene derivs. also contained alkyl amino groups, which quenched the anthracene emission by photo-induced electron transfer. Both anthracene derivs. displayed increased intensities and lifetime in the presence of glucose, as seen from the frequency-domain measurements. A fluorescence lifetime change from 9.8 to 12.4 and 5.7 to 11.8 ns is obsd., after the addn. of glucose, for the anthracene substituted with one and two boronic

acid groups, resp. This results in a change in the phase angle up to 15.degree. and 30.degree. and in the modulation up to 12 and 25% at 30 MHz for these compds., resp. Titrn. curves in the presence of BSA and micelles are also presented to show the potential interferences from biomols. Dissocn. consts. were evaluated for both compds., and assocn. with glucose was found to be reversible. Importantly, the apparent glucose binding consts. are about 5- to 10-fold smaller with phase, modulation, or mean lifetime than with intensities measurements, shifting the glucose-sensitive range to physiol. values. Combining these results and the use of a simple UV-LED as excitation source, the results show an interesting potential of these two compds. in the development of lifetime base devices using synthetic probes for glucose. (c) 2001 Academic Press.

ST glucose probe fluorescence lifetime sensing

IT Electron transfer

Fluorometry

Formation constant

Simulation and Modeling, physicochemical

(synthetic glucose probes for fluorescence-lifetime-based sensing)

IT 50-99-7, Glucose, analysis

RL: ANT (Analyte); ANST (Analytical study)

(synthetic glucose probes for fluorescence-lifetime-based sensing)

IT 156742-45-9 162254-07-1

RL: ARU (Analytical role, unclassified); ANST (Analytical study)

(synthetic glucose probes for fluorescence-lifetime-based sensing)

RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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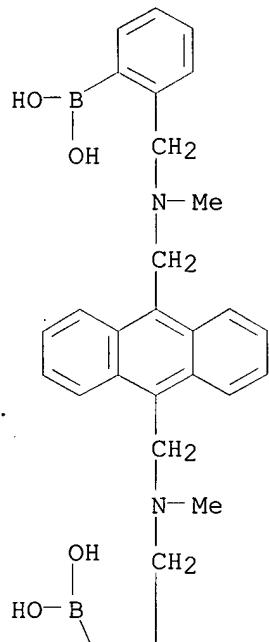
IT 162254-07-1

RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(synthetic glucose probes for fluorescence-lifetime-based sensing)

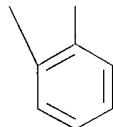
RN 162254-07-1 HCPLUS

CN Boronic acid, [9,10-anthracenediylbis[methylene(methylimino)methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



L80 ANSWER 3 OF 12 HCPLUS COPYRIGHT 2003 ACS on STN

AN 2001:246603 HCPLUS

DN 134:287603

TI Electroluminescent devices having phenylanthracene-based polymers

IN Zheng, Shiying; Shi, Jianmin; Klubek, Kevin P.

PA Eastman Kodak Company, USA

SO Eur. Pat. Appl., 37 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM C09K011-06

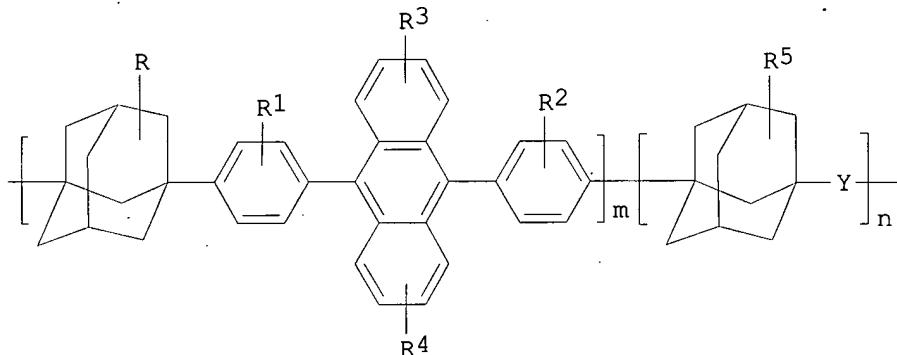
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1088875	A2	20010404	EP 2000-203196	20000914 <--
	EP 1088875	A3	20020626		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 6268072	B1	20010731	US 1999-410767	19991001 <--
	JP 2001160491	A2	20010612	JP 2000-301079	20000929 <--
PRAI	US 1999-410767	A	19991001	<--	

GI



AB Electroluminescent devices comprising an anode, a cathode, and polymer luminescent materials disposed between the anode and cathode are described in which the polymeric luminescent material include (9-(4-adamantanyl)phenyl)-10-phenylanthracene-based polymers described by the general formula I (R, R1, R2, R3, R4, and R5 = individually selected H, C1-24 alkyl or C1-24 alkoxy, (un)substituted C6-28 aryl, (un)substituted C4-40 heteroaryl groups, or F, Cl, Br, a cyano group, or a nitro group; n/(m+n) = 0 to 1; m and n are integers but m cannot be 0; and Y are divalent linking groups).

ST org electroluminescent device adamantanyl phenyl phenylanthracene polymer  
IT Phosphors

(electroluminescent; org. electroluminescent devices using 9-(4-adamantanyl)phenyl)-10-phenylanthracene-based polymers)

IT Electroluminescent devices  
(org.; org. electroluminescent devices using 9-(4-adamantanyl)phenyl)-10-phenylanthracene-based polymers)

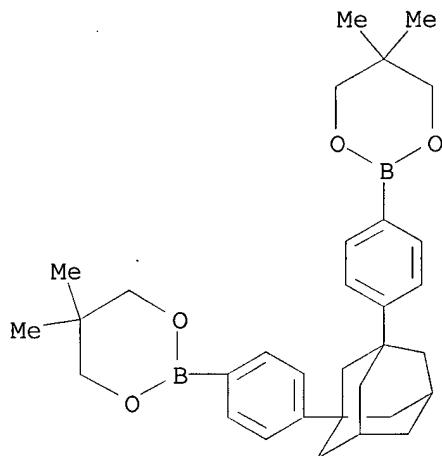
IT 332083-47-3P 332083-48-4P 332083-49-5P 332083-50-8P 332083-51-9P  
332083-52-0P 332083-53-1P 332083-54-2P 332083-55-3P 332083-56-4P  
332344-74-8P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(org. electroluminescent devices using 9-(4-adamantanyl)phenyl)-10-phenylanthracene-based polymers)

IT 4805-22-5P, 5,5'-Dibromo-2,2'-bithiophene 18798-85-1P 18800-99-2P

31592-26-4P 40189-21-7P, 1,3-Diphenyladamantane 62375-58-0P  
 83102-75-4P 99964-58-6P 117766-40-2P 182684-43-1P 207799-29-9P  
 210347-59-4P **269412-04-6P** 269729-93-3P 332083-42-8P  
 332083-43-9P 332083-44-0P 332083-45-1P 332083-46-2P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (org. electroluminescent devices using 9-(4-adamantanyl)phenyl)-10-phenylanthracene-based polymers)  
 IT 83-56-7, 1,5-Dihydroxynaphthalene 84-60-6, 2,6-Dihydroxyanthraquinone  
 98-06-6, tert-Butyl benzene 492-97-7, 2,2'-Bithiophene 768-90-1,  
 1-Bromoadamantane 2712-78-9, Bis[(trifluoroacetoxy)iodo]benzene  
 3236-71-3 18908-66-2, 2-Ethylhexyl bromide 32703-79-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (org. electroluminescent devices using 9-(4-adamantanyl)phenyl)-10-phenylanthracene-based polymers)  
 IT 38186-51-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (org. electroluminescent devices using 9-(4-adamantanyl)phenyl)-10-phenylanthracene-based polymers)  
 IT **269412-04-6P**  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (org. electroluminescent devices using 9-(4-adamantanyl)phenyl)-10-phenylanthracene-based polymers)  
 RN 269412-04-6 HCAPLUS  
 CN 1,3,2-Dioxaborinane, 2,2'-(tricyclo[3.3.1.13,7]decane-1,3-diyl)di-4,1-phenylene)bis[5,5-dimethyl- (9CI) (CA INDEX NAME)



L80 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2001:186026 HCAPLUS  
 DN 134:219381  
 TI Minimally invasive methods for measuring analytes in vivo  
 IN Bell, Michael L.; McNeal, Jack D.  
 PA Beckman Coulter, Inc., USA  
 SO PCT Int. Appl., 21 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM G01N033-66  
 CC 9-16 (Biochemical Methods)  
 FAN.CNT 1  
 PATENT NO. KIND DATE APPLICATION NO. DATE

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PI WO 2001018543 A1 20010315 WO 2000-US24438 20000906 <--  
 W: JP  
 RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,  
 PT, SE  
 US 6366793 B1 20020402 US 1999-393738 19990910 <--  
 EP 1129353 A1 20010905 EP 2000-959941 20000906 <--  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, FI  
 JP 2003508186 T2 20030304 JP 2001-522081 20000906 <--  
 PRAI US 1999-393738 A 19990910 <--  
 WO 2000-US24438 W 20000906 <--

AB Minimally invasive methods for measuring an analyte, such as glucose, contained in the interstitial fluid of a body are provided. The methods include the steps of: (a) providing at least one sensor particle capable of generating a detectable analyte signal in responding to the analyte concn. of the body, (b) placing the sensor particle into the skin of the body for allowing the sensor particle to be in contact with the interstitial fluid of the body to generate the detectable analyte signal, (c) detecting the generated analyte signal, and (d) detg. the concn. of the analyte contained in the interstitial fluid. The sensor particles may be made to be responsive to an analyte such as glucose concn. contained in a body fluid by including a photo-induced electron transfer receptor specific for the analyte in the sensor particle.

ST minimally invasive analyte  
 IT Polymers, analysis  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (Bio-resorbable; minimally invasive methods for measuring analytes in vivo)  
 IT Particles  
 (Hydrophilic; minimally invasive methods for measuring analytes in vivo)  
 IT Particles  
 (Hydrophobic insol.; minimally invasive methods for measuring analytes in vivo)  
 IT Glass, analysis  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (controlled pore; minimally invasive methods for measuring analytes in vivo)  
 IT Body fluid  
 (interstitial; minimally invasive methods for measuring analytes in vivo)  
 IT Body, anatomical  
 Body fluid  
 Concentration (condition)  
 Electron transfer  
 Fluorescent substances  
 Gels  
 Latex  
 Particles  
 Sensors  
 Skin  
 Vertebrate (Vertebrata)  
 (minimally invasive methods for measuring analytes in vivo)  
 IT Receptors  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (minimally invasive methods for measuring analytes in vivo)  
 IT Gelatins, analysis  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (minimally invasive methods for measuring analytes in vivo)  
 IT Glass, analysis  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (minimally invasive methods for measuring analytes in vivo)

IT Glass beads  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(minimally invasive methods for measuring analytes in vivo)

IT Polymers, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(minimally invasive methods for measuring analytes in vivo)

IT Polymers, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(minimally invasive methods for measuring analytes in vivo)

IT IR radiation  
(near-IR; minimally invasive methods for measuring analytes in vivo)

IT Membranes, nonbiological  
(semipermeable; minimally invasive methods for measuring analytes in vivo)

IT 50-99-7, D-Glucose, analysis 26780-50-7, Poly-DL-lactide-co-glycolide  
RL: ANT (Analyte); ANST (Analytical study)  
(minimally invasive methods for measuring analytes in vivo)

IT 496-15-1D, Indoline, derivs. 13780-71-7D, Boronic acid, derivs.  
**162254-07-1**  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(minimally invasive methods for measuring analytes in vivo)

IT 9002-86-2D, Polyvinyl chloride, plasticized 9003-53-6, Polystyrene  
9005-25-8, Starch, analysis 26009-03-0, Polyglycolic acid 26124-68-5,  
Polyglycolic acid  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(minimally invasive methods for measuring analytes in vivo)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

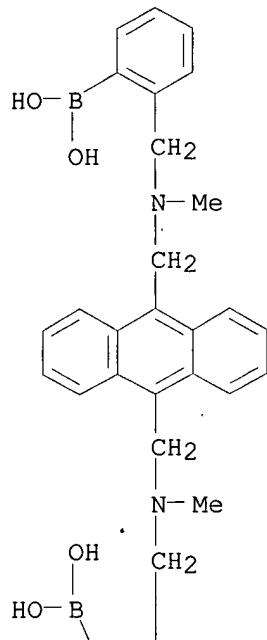
(1) Chick, W; US 5342789 A 1994 HCPLUS  
(2) James, T; US 5503770 A 1996 HCPLUS  
(3) James, T; J AM CHEM SOC 1995, V117, P8982 HCPLUS  
(4) Minimed Inc; WO 9822820 A 1998 HCPLUS  
(5) Univ Pittsburgh; WO 0064492 A 2000 HCPLUS

IT **162254-07-1**  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(minimally invasive methods for measuring analytes in vivo)

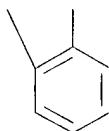
RN 162254-07-1 HCPLUS

CN Boronic acid, [9,10-anthracenediylbis[methylene(methylimino)methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



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L80 ANSWER 5 OF 12 HCPLUS COPYRIGHT 2003 ACS on STN

AN 2000:425799 HCPLUS

DN 133:164413

TI Novel Blue Light Emitting Polymer Containing an Adamantane Moiety

AU Zheng, Shiying; Shi, Jianmin; Mateu, Raphaele

CS Eastman Kodak Company, Rochester, NY, 14650, USA

SO Chemistry of Materials (2000), 12(7), 1814-1817

CODEN: CMATEX; ISSN: 0897-4756

PB American Chemical Society

DT Journal

LA English

CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37

AB A blue light emitting polymer contg. a naphthalenevinylene segment and an adamantane (Ad) spacer group as well as a green light emitting polymer with a phenylenevinylene segment and an Ad-spacer were synthesized and characterized. Their thermal stability, glass transition temp., and solv. were detd. and their UV-vis, photoluminescence and electroluminescence spectra were recorded and compared with those of relevant model compds. The polymers showed good solv. and excellent thermal stability. The incorporation of the rigid Ad-units increased glass transition and thermal decompn. temp. The Ad-moiety acts as an efficient  $\pi$ -conjugation interrupter and enables the tuning of the emitting color by control of

conjugation length.

ST adamantane polynaphthalenevinylene polyphenylenevinylene luminescence electroluminescence LED; adamantyl phenylenevinylene naphthalenevinylene monomer prepn polymn

IT Electric current-potential relationship  
Glass transition temperature  
Luminescence  
Luminescence, electroluminescence  
(prepn. and light emitting properties of adamantane unit-contg. polynaphthalenevinylene and polyphenylenevinylene)

IT Poly(arylenealkenylenes)  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and light emitting properties of adamantane unit-contg. polynaphthalenevinylene and polyphenylenevinylene)

IT Monomers  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and polymn. of adamantane or phenylenevinylene or naphthalenevinylene-contg. monomers)

IT 269412-05-7P 269729-98-8P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(model compd.; prepn. and light emitting properties of adamantane unit-contg. polynaphthalenevinylene and polyphenylenevinylene)

IT 269412-04-6P 269729-93-3P 269729-94-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(monomer; prepn. and polymn. of adamantane or phenylenevinylene or naphthalenevinylene-contg. monomers)

IT 269729-95-5P 269729-96-6P 269729-97-7P 269735-69-5P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and light emitting properties of adamantane unit-contg. polynaphthalenevinylene and polyphenylenevinylene)

IT 98-80-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(prepn. and light emitting properties of adamantane unit-contg. polynaphthalenevinylene and polyphenylenevinylene)

IT 83-56-7, 1,5-Dihydroxynaphthalene 106-21-8 121-43-7, Trimethyl borate 122-52-1, Triethyl phosphite 126-30-7 150-76-5, 4-Methoxyphenol 638-45-9, 1-Iodothexane 1122-91-4, 4-Bromobenzaldehyde 20677-12-7 83102-75-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(prepn. and polymn. of adamantane or phenylenevinylene or naphthalenevinylene-contg. monomers)

IT 84-59-3P, 2,6-Dibromo-1,5-dihydroxynaphthalene 3383-83-3P, 1-Bromo-3,7-dimethyloctane 182684-43-1P 207799-29-9P 209347-80-8P 287919-00-0P 287919-01-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and polymn. of adamantane or phenylenevinylene or naphthalenevinylene-contg. monomers)

RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD

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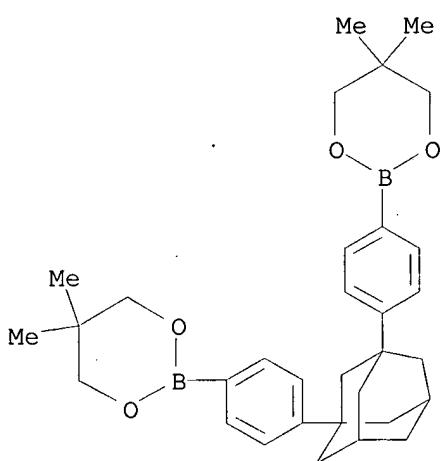
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 HCPLUS

IT 269412-04-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (monomer; prepn. and polymn. of adamantine or phenylenevinylene or naphthalenevinylene-contg. monomers)

RN 269412-04-6 HCPLUS

CN 1,3,2-Dioxaborinane, 2,2'-(tricyclo[3.3.1.13,7]decane-1,3-diyl)di-4,1-phenylene)bis[5,5-dimethyl- (9CI) (CA INDEX NAME)



L80 ANSWER 6 OF 12 HCPLUS COPYRIGHT 2003 ACS on STN

AN 2000:208441 HCPLUS

DN 132:348053

TI Novel blue light emitting polymers

AU Zheng, Shiying; Shi, Jianmin; Mateu, Raphaele

CS Eastman Kodak Company, Rochester, NY, 14650, USA

SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2000), 41(1), 822-823

CODEN: ACPPAY; ISSN: 0032-3934  
 PB American Chemical Society, Division of Polymer Chemistry  
 DT Journal  
 LA English  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 36, 73  
 AB Light-emitting polymers contg. rigid adamantane moiety in the main chain and naphthalene vinylene or phenylene vinylene chromophore segments were synthesized via Suzuki coupling reaction; the polymers, I and II, resp., are sol. in org. solvents and have av. mol. wt. of 18,000. The adamantane units led to significant increase of Tg to above 150.degree. and of thermal decompr. temp. (Td) to above 360.degree.. Polymers and model compds. show almost identical absorption and emission spectra in soln. The adamantane unit is an efficient n-conjugation interrupter. Films of polymer I show strong photoluminescence peaks at 470 nm in the blue region and a single-layer LED also emitted blue light at 470 nm. In contrast, the photoluminescence and electroluminescence peaks of polymer II appear in the green region at 516 nm. The replacement of a benzene ring with a naphthalene unit alters the effective conjugation length of the luminophor resulting in a blue shift. The single-layer LED of both polymers shows relatively low turn-on voltage, 5.5 V for polymer I and 10.5 V for polymer II.  
 ST adamantane naphthalene vinylene copolymer prepn luminescence; phenylene vinylene adamantane copolymer prepn Suzuki coupling; conjugation length polyphenylenevinylene polynaphthalenevinylene adamantane moiety  
 IT Polymerization  
     (Suzuki coupling; prepn. of monomers and Suzuki coupling polymn. to obtain blue light emitting poly(arylene vinylene-adamantane) conjugated polymers)  
 IT Poly(arylenealkenylenes)  
   RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
     (adamantane-contg.; prepn. of monomers and Suzuki coupling polymn. to obtain blue light emitting poly(arylene vinylene-adamantane) conjugated polymers)  
 IT Polymers, preparation  
   RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
     (conjugated; prepn. of monomers and Suzuki coupling polymn. to obtain blue light emitting poly(arylene vinylene-adamantane) conjugated polymers)  
 IT Polymer chains  
     (conjugation length; prepn. of monomers and Suzuki coupling polymn. to obtain blue light emitting poly(arylene vinylene-adamantane) conjugated polymers)  
 IT Glass transition temperature  
 Luminescence  
 Luminescence, electroluminescence  
 Optical absorption  
 Suzuki coupling reaction  
     (prepn. of monomers and Suzuki coupling polymn. to obtain blue light emitting poly(arylene vinylene-adamantane) conjugated polymers)  
 IT 40189-21-7P, 1,3-Diphenyladamantane 83102-75-4P, 1,3-Bis(4-iodophenyl)adamantane  
   RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
     (intermediate; prepn. of monomers and Suzuki coupling polymn. to obtain blue light emitting poly(arylene vinylene-adamantane) conjugated polymers)  
 IT 269412-05-7P 269729-98-8P  
   RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
     (model compd.; prepn. of monomers and Suzuki coupling polymn. to obtain blue light emitting poly(arylene vinylene-adamantane) conjugated polymers)  
 IT 269412-04-6P 269729-93-3P 269729-94-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(monomer; prepn. of monomers and Suzuki coupling polymn. to obtain blue light emitting poly(arylene vinylene-adamantane) conjugated polymers)

IT 269729-95-5P 269729-96-6P 269729-97-7P 269735-69-5P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of monomers and Suzuki coupling polymn. to obtain blue light emitting poly(arylene vinylene-adamantane) conjugated polymers)

IT 71-43-2, Benzene, reactions 121-43-7, Trimethoxyboron 126-30-7  
 768-90-1, 1-Bromoadamantane 1122-91-4, p-Bromobenzaldehyde 20677-12-7,  
 Diethyl 4-bromophenylphosphonate 182684-43-1 209347-80-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (prepn. of monomers and Suzuki coupling polymn. to obtain blue light emitting poly(arylene vinylene-adamantane) conjugated polymers)

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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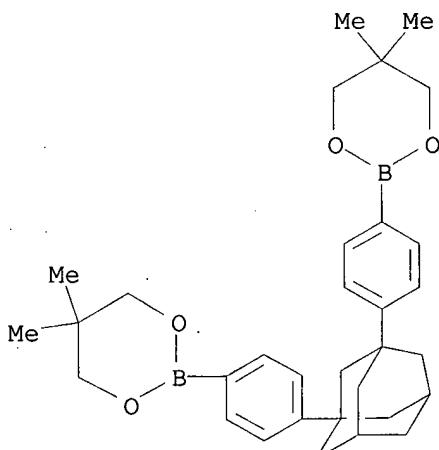
IT 269412-04-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(monomer; prepn. of monomers and Suzuki coupling polymn. to obtain blue light emitting poly(arylene vinylene-adamantane) conjugated polymers)

RN 269412-04-6 HCPLUS

CN 1,3,2-Dioxaborinane, 2,2'-(tricyclo[3.3.1.13,7]decane-1,3-diyl)-4,1-phenylene)bis[5,5-dimethyl- (9CI) (CA INDEX NAME)



L80 ANSWER 7 OF 12 HCPLUS COPYRIGHT 2003 ACS on STN  
 AN 1999:136451 HCPLUS  
 DN 131:41664  
 TI A fluorescent glucose sensor binding covalently to all five hydroxy groups of .alpha.-D-glucofuranose. A reinvestigation  
 AU Bielecki, Mia; Eggert, Hanne; Norrild, Jens Chr.  
 CS Department of Chemistry, University of Copenhagen, Copenhagen, DK-2100, Den.  
 SO Journal of the Chemical Society, Perkin Transactions 2: Physical Organic Chemistry (1999), (3), 449-456  
 CODEN: JCPKBB; ISSN: 0300-9580  
 PB Royal Society of Chemistry  
 DT Journal  
 LA English  
 CC 9-5 (Biochemical Methods)  
 AB The structures of the complexes between a fluorescent bisboronic acid 7 and glucose have been detd. Shinkai et al.1 previously studied the complex between 7 and glucose and they deduced a 1,2:4,6-.alpha.-D-glucopyranose bisboronate structure. We have shown that this structure is only valid as an initial complex formed under completely nonaq. conditions. In the presence of water the pyranose complex rearranges rapidly into an .alpha.-D-glucofuranose-1,2:3,5,6-bisboronate in which all five free hydroxy groups of glucose are covalently bound by the sensor mol. A favorable B-N interaction around the 1,2-binding site and the effect of an o-ammoniomethyl group on the pKa value of the second boronic acid group allow for the obsd. binding at neutral pH. The structure evaluations are based on <sup>1</sup>H and <sup>13</sup>C NMR data as well as information obtained from <sup>1</sup>JCC coupling consts. The fluorescence spectra of both complexes were measured and discussed. MALDI TOF-MS expts. showed competitive formation of 1:2 (boronic acid:glucose) complexes under conditions of physiol. glucose levels.  
 ST fluorescent glucose sensor glucofuranose hydroxy group binding  
 IT Biosensors  
 Conformation  
 NMR (nuclear magnetic resonance)  
 (a fluorescent glucose sensor binding covalently to all five hydroxy groups of .alpha.-D-glucofuranose)  
 IT 227316-54-3P 227316-55-4P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (a fluorescent glucose sensor binding covalently to all five hydroxy groups of .alpha.-D-glucofuranose)  
 IT 126-30-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (a fluorescent glucose sensor binding covalently to all five hydroxy groups of .alpha.-D-glucofuranose)  
 IT 16419-60-6P, 2-Methylphenylboronic acid 34373-96-1P 91983-14-1P, o-(Bromomethyl)phenylboronic acid 166821-88-1P **166821-90-5P**  
 169324-44-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (a fluorescent glucose sensor binding covalently to all five hydroxy groups of .alpha.-D-glucofuranose)  
 IT 161963-14-0P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (rearrangement; a fluorescent glucose sensor binding covalently to all five hydroxy groups of .alpha.-D-glucofuranose)  
 RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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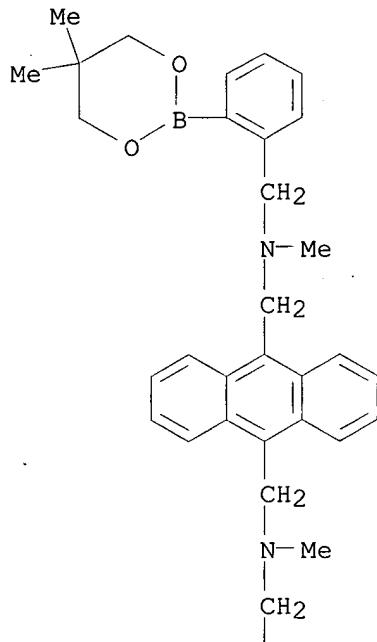
IT **166821-90-5P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(a fluorescent glucose sensor binding covalently to all five hydroxy groups of .alpha.-D-glucofuranose)

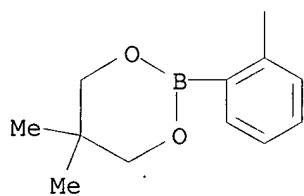
RN 166821-90-5 HCPLUS

CN 9,10-Anthracenedimethanamine, N,N'-bis[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-N,N'-dimethyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



L80 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1996:334502 HCAPLUS  
DN 125:80937  
TI Molecular design of artificial sugar sensing systems  
AU Shinkai, Seiji; Takeuchi, Makayuki  
CS Professor Chem. Dep. Chem. Sci. Technol., Faculty Eng., Kyushu Univ.,  
Fukuoka, 812, Japan  
SO TrAC, Trends in Analytical Chemistry (1996), 15(5), 188-194  
CODEN: TTAEDJ; ISSN: 0165-9936  
PB Elsevier  
DT Journal  
LA English  
CC 9-5 (Biochemical Methods)  
Section cross-reference(s): 13, 80  
AB For the development of new receptor mols. that can precisely recognize sugar mols., we synthesized a no. of diboronic acids. Since one boronic acid can react with two OH groups (one diol group) to form a boronate ester, one diboronic acid can immobilize two diol units to form a sugar-contg. macrocycle. The selectivity can be tuned by the relative spatial position of the two boronic acids and the complexation event can be read out by CD spectroscopy. When a boronic acid group is combined

intramolecularly with an aminomethyl fluorophore, the complexation event can be conveniently read out by fluorescence spectroscopy. This is a novel application of a PET (photoinduced electron transfer) sensor: the sugar-binding changes the strength of the B.cndot..cndot..cndot.N interaction, which eventually changes the fluorescence quenching efficiency of the amine. We demonstrated, by using a chiral 1,1'-binaphthyl group as a fluorophore, that even chiral recognition of sugars is possible. These abundant examples support the superiority of boronic-acid-based covalent bond recognition over hydrogen-bond-based noncovalent bond recognition for sugars in water.

ST sugar sensor artificial receptor boronic acid; water sugar detection artificial receptor; photoinduced electron transfer sensor sugar

IT Carbohydrates and Sugars, analysis  
RL: ANT (Analyte); ANST (Analytical study)  
(mol. design of artificial sugar sensing systems)

IT Receptors  
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(mol. design of artificial sugar sensing systems)

IT Circular dichroism spectroscopy  
(mol. design of artificial sugar sensing systems mol. design of artificial sugar sensing systems)

IT Sensors  
(photoinduced electron transfer; mol. design of artificial sugar sensing systems)

IT Spectrochemical analysis  
(fluorometric, mol. design of artificial sugar sensing systems)

IT 7732-18-5, Water, analysis  
RL: AMX (Analytical matrix); ANST (Analytical study)  
(mol. design of artificial sugar sensing systems)

IT 50-99-7, D-Glucose, analysis 7776-48-9, L-Fructose  
RL: ANT (Analyte); ANST (Analytical study)  
(mol. design of artificial sugar sensing systems)

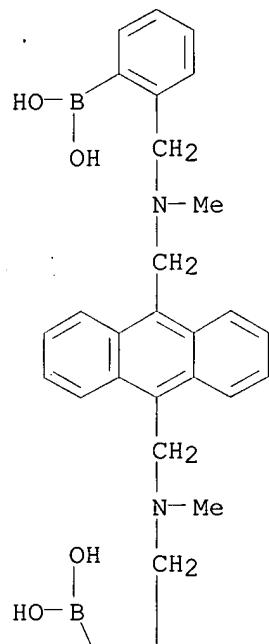
IT 133968-06-6 144987-66-6 156742-45-9 159614-36-5 **162254-07-1**  
162440-79-1 162440-80-4 173394-23-5  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(mol. design of artificial sugar sensing systems)

IT **162254-07-1**  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(mol. design of artificial sugar sensing systems)

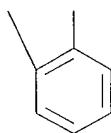
RN 162254-07-1 HCAPLUS

CN Boronic acid, [9,10-anthracenediylbis[methylene(methylimino)methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



L80 ANSWER 9 OF 12 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1995:878895 HCAPLUS

DN 123:280304

TI Fluorescent phenylboronic acids for detection of saccharides

IN James, Tony; Sandanayake, Saman; Shinkai, Seiji

PA Research Development Corporation of Japan, Japan

SO Brit. UK Pat. Appl., 24 pp.

CODEN: BAXXDU

DT Patent

LA English

IC ICM C07F005-02

ICS C09K011-06

CC 9-15 (Biochemical Methods)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 2284809	A1	19950621	GB 1994-22327	19941104 <--
	GB 2284809	B2	19980429		
JP	08053467	A2	19960227	JP 1994-293879	19941101 <--
JP	2883824	B2	19990419		
US	5503770	A	19960402	US 1994-336236	19941107 <--
DE	4439783	A1	19980507	DE 1994-4439783	19941107 <--
DE	4439783	C2	20020808		

PRAI JP 1993-302385 A 19931107 <--  
JP 1994-147061 A 19940606 <--

OS MARPAT 123:280304

GI For diagram(s), see printed CA Issue.

AB Fluorophore I (R1 = aryl, preferably anthryl; R2 = alkyl, aryl; m, n = 0-2), in which an amino N atom can interact intramolecularly with the boronic acid, emits high-intensity fluorescence upon binding to saccharide(s), and is therefore suitable for use in the detection of saccharide(s). Thus, o-tolylmagnesium bromide reacted with tri-Me borate to form o-tolylboronic anhydride, which was brominated on the Me group with N-bromosuccinimide and refluxed with 9-(methylamino)methylanthracene to form I (R1 = 9-anthryl, R2 = Me) (II). An aq. soln. of II fluoresced intensely in the presence of glucose or fructose.

ST sugar fluorometric detn phenylboronate

IT Carbohydrates and Sugars, analysis  
RL: ANT (Analyte); ANST (Analytical study)  
(fluorescent phenylboronic acids for detection of saccharides)

IT Spectrochemical analysis  
(fluorometric, fluorescent phenylboronic acids for detection of saccharides)

IT 50-99-7, D-Glucose, analysis 57-48-7, D-Fructose, analysis 59-23-4,  
D-Galactose, analysis  
RL: ANT (Analyte); ANST (Analytical study)  
(fluorescent phenylboronic acids for detection of saccharides)

IT 156742-45-9 **162254-07-1**  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(fluorescent phenylboronic acids for detection of saccharides)

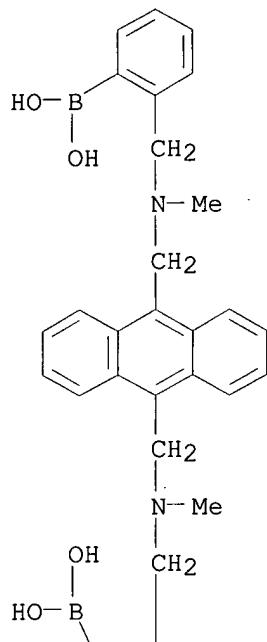
IT 121-43-7, Trimethyl borate 932-31-0, o-Tolylmagnesium bromide  
73356-19-1, 9-(Methylamino)methylanthracene 169324-44-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(fluorescent phenylboronic acids for detection of saccharides)

IT **162254-07-1**  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(fluorescent phenylboronic acids for detection of saccharides)

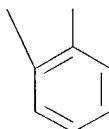
RN 162254-07-1 HCAPLUS

CN Boronic acid, [9,10-anthracenediylbis[methylene(methylimino)methylene-2,1-phenylene]]biss- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



L80 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1995:751078 HCAPLUS  
 DN 123:138027  
 TI Novel saccharide-photoinduced electron transfer sensors based on the interaction of boronic acid and amine  
 AU James, Tony D.; Sandanayake, K. R. A. Samankumara; Iguchi, Ritsuko; Shinkai, Seiji  
 CS ERATO, Research Development Corporation of Japan, Kurume, 830, Japan  
 SO Journal of the American Chemical Society (1995), 117(35), 8982-7  
 CODEN: JACSAT; ISSN: 0002-7863  
 PB American Chemical Society  
 DT Journal  
 LA English  
 CC 9-12 (Biochemical Methods)  
 Section cross-reference(s): 80  
 AB Two boronic acid systems, monoboronic acid 3 and diboronic acid 8, were synthesized. When saccharides form cyclic boronate esters with these boronic acids, the Lewis acid-base interaction between the boronic acid moiety and tertiary amine is strengthened; when saccharides form cyclic boronate esters with boronic acids the acidity of the boronic acid is enhanced. The strength of this acid-base interaction modulates the photoinduced electron transfer (PET) from the amine to anthracene. Both of these compds. show increased fluorescence at pH 7.77 through

suppression of the photoinduced electron transfer from nitrogen to anthracene on saccharide binding, a direct result of the stronger boron-nitrogen bond. Compd. 3 shows the typical selectivity of monoboronic acids towards saccharides. Compd. 8 which has a cleftlike structure is particularly selective and sensitive for glucose due to the formation of an intramol. 1:1 complex between the two boronic acids and the 1,2- and 4,6-hydroxyls of glucose. This is the first example in which ditopic recognition of monosaccharides is achieved in a PET sensor system.

ST monosaccharide detn sensor boronic acid amine; saccharide electron transfer sensor

IT Electron exchange and Charge transfer  
Fluorescence  
Sensors  
(novel saccharide-photoinduced electron transfer sensors based on interaction of boronic acid and amine)

IT Monosaccharides  
RL: ANT (Analyte); ANST (Analytical study)  
(novel saccharide-photoinduced electron transfer sensors based on interaction of boronic acid and amine)

IT 50-99-7, Glucose, analysis 57-48-7, Fructose, analysis 59-23-4, Galactose, analysis 107-21-1, 1,2-Ethanediol, analysis 6038-51-3, Allose  
RL: ANT (Analyte); ANST (Analytical study)  
(novel saccharide-photoinduced electron transfer sensors based on interaction of boronic acid and amine)

IT 156742-45-9P **162254-07-1P**  
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)  
(novel saccharide-photoinduced electron transfer sensors based on interaction of boronic acid and amine)

IT 7294-50-0 7481-16-5 91994-11-5 166821-89-2 **166821-90-5**  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(novel saccharide-photoinduced electron transfer sensors based on interaction of boronic acid and amine)

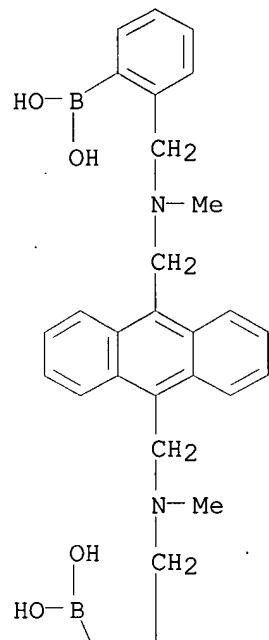
IT 166821-88-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(novel saccharide-photoinduced electron transfer sensors based on interaction of boronic acid and amine)

IT **162254-07-1P**  
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)  
(novel saccharide-photoinduced electron transfer sensors based on interaction of boronic acid and amine)

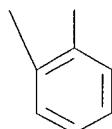
RN 162254-07-1 HCPLUS

CN Boronic acid, [9,10-anthracenediylbis[methylene(methylimino)methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

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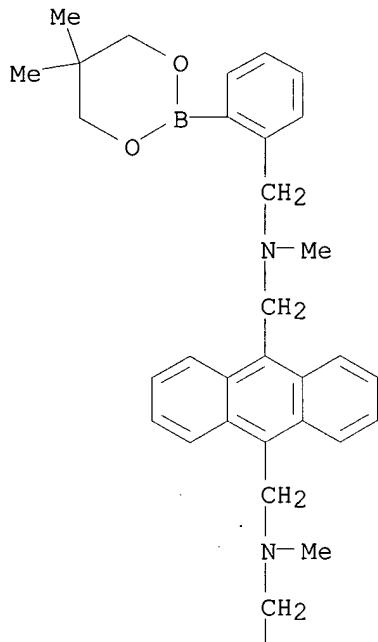
IT 166821-90-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (novel saccharide-photoinduced electron transfer sensors based on  
 interaction of boronic acid and amine)

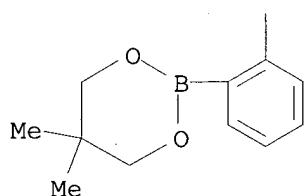
RN 166821-90-5 HCAPLUS

CN 9,10-Anthracenedimethanamine, N,N'-bis[[2-(5,5-dimethyl-1,3,2-dioxaborinan-2-yl)phenyl]methyl]-N,N'-dimethyl- (9CI) (CA INDEX NAME)

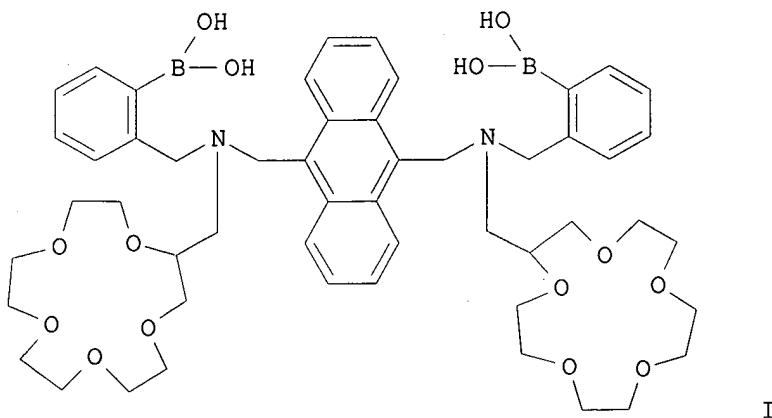
PAGE 1-A



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L80 ANSWER 11 OF 12 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1995:713232 HCAPLUS  
DN 123:228252  
TI A diboronic acid 'glucose cleft' and a biscrown ether 'metal sandwich' are allosterically coupled  
AU James, Tony D.; Shinkai, Seiji  
CS CHEMIRECOGNICS Project, ERATO, Res. Dev. Corp. of Japan, Kurume, 830, Japan  
SO Journal of the Chemical Society, Chemical Communications (1995), (14), 1483-5  
CODEN: JCCCAT; ISSN: 0022-4936  
PB Royal Society of Chemistry  
DT Journal  
LA English  
CC 29-4 (Organometallic and Organometalloidal Compounds)  
OS CASREACT 123:228252  
GI



AB Glucose is released from the diboronic acid 'cleft' I when a metal 'sandwich' is formed by two 15-crown-5 rings; the binding events are sensitively monitored by changes in the fluorescence intensity.

ST diboronic acid glucose cleft biscrown ether; fluorescence biscrown ether metal sandwich diboronic

IT Fluorescence  
(a diboronic acid glucose cleft and a biscrown ether metal sandwich are allosterically coupled and monitored by changes in the fluorescence intensity)

IT 50-99-7, D-Glucose, reactions 7044-91-9, 9,10-Anthracenedicarboxaldehyde 7439-93-2D, Lithium, cation 7440-09-7D, Potassium, cation 7440-23-5D, Sodium, cation 7440-24-6D, Strontium, cation 7440-39-3D, Barium, cation 7440-46-2D, Cesium, cation 83585-56-2 166821-88-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(a diboronic acid glucose cleft and a biscrown ether metal sandwich are allosterically coupled and monitored by changes in the fluorescence intensity)

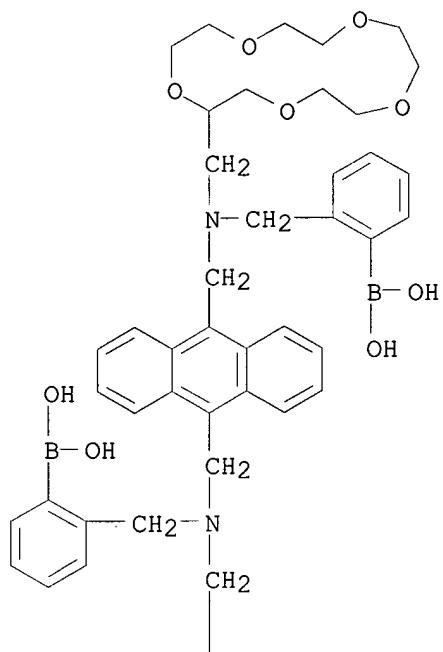
IT 168558-55-2P **168558-56-3P**  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(a diboronic acid glucose cleft and a biscrown ether metal sandwich are allosterically coupled and monitored by changes in the fluorescence intensity)

IT **168558-56-3P**  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(a diboronic acid glucose cleft and a biscrown ether metal sandwich are allosterically coupled and monitored by changes in the fluorescence intensity)

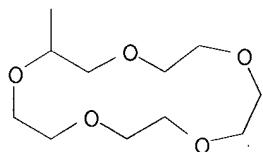
RN 168558-56-3 HCAPLUS

CN Boronic acid, [9,10-anthracenediylbis[methylene[(2,3,5,6,8,9,11,12,14,15-decahydro-1,4,7,10,13-pentaoxacyclopentadec-2-yl)methyl]imino]methylene-2,1-phenylene]bis- (9CI) (CA INDEX NAME)

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L80 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1995:366466 HCAPLUS  
DN 123:334134  
TI A glucose-specific molecular fluorescence sensor  
AU James, Tony D.; Sandanayake, K. R. A. Samankumara; Shinkai, Seiji  
CS Shinkai Chemirecognics Project, ERATO, Aikawa, 2432-3, Japan  
SO Angewandte Chemie (1994), 106(21), 2287-9  
CODEN: ANCEAD; ISSN: 0044-8249  
PB VCH  
DT Journal  
LA Japanese  
CC 9-5 (Biochemical Methods)  
Section cross-reference(s): 80  
AB Glucose can be detd. in the physiol. range in blood by fluorometry using as photoinduced electron transfer sensor a 9,10-bis-aminomethylanthracene deriv. contg. 2 boronic acid groups. The 2 boronic acid groups are directed to the 1,2- and 4,6-hydroxy groups of glucose and form a fluorescent cyclic 1:1 complex that was confirmed by NMR.  
ST glucose detn photoinduced electron transfer sensor; fluorometry glucose detn boronic acid deriv; anthracene diboronate deriv glucose detn  
IT Blood analysis  
(glucose-specific mol. fluorescence sensor)

IT 50-99-7, D Glucose, analysis  
 RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent)  
 (glucose-specific mol. fluorescence sensor)

IT 162254-07-1  
 RL: ARG (Analytical reagent use); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent); USES (Uses)  
 (glucose-specific mol. fluorescence sensor)

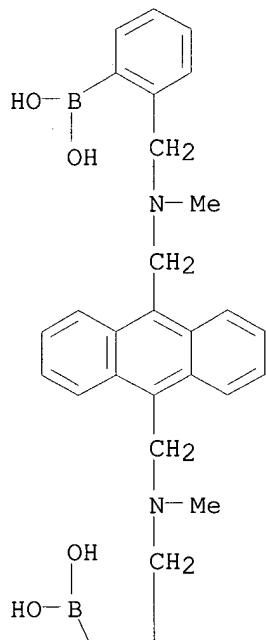
IT 161963-14-0P  
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
 (glucose-specific mol. fluorescence sensor)

IT 162254-07-1  
 RL: ARG (Analytical reagent use); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent); USES (Uses)  
 (glucose-specific mol. fluorescence sensor)

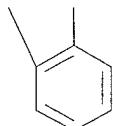
RN 162254-07-1 HCPLUS

CN Boronic acid, [9,10-anthracenediylbis[methylene(methylimino)methylene-2,1-phenylene]]bis- (9CI) (CA INDEX NAME)

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(FILE 'HOME' ENTERED AT 13:33:24 ON 06 AUG 2003)  
 SET COST OFF

FILE 'HCAPLUS' ENTERED AT 13:33:37 ON 06 AUG 2003

L1 4 S US20020127626/PN  
 E DANILOFF G/AU  
 L2 12 S E4  
 E KALIVRETONOS A/AU  
 L3 32 S E3-E8  
 E AU L1  
 E NIKOLAITCHIK A/AU  
 L4 15 S E4-E6  
 L5 16 S (SENSOR?(L)MED?(L)SCI?)/PA,CS  
 L6 14 S L5 NOT (NIIGATA OR LARIBOISIERE)/CS  
 L7 4 S L1 AND L2-L4,L6  
 L8 48 S L2-L4,L6 NOT L7  
 SEL RN L7

FILE 'REGISTRY' ENTERED AT 13:37:05 ON 06 AUG 2003

L9 79 S E1-E79  
 L10 18 S L9 AND B/ELS  
 L11 11 S L10 AND C6-C6-C6/ES  
 L12 2 S L11 NOT BOC30/ES  
 L13 9 S L11 NOT L12  
 L14 1 S (441011-77-4 OR 443290-72-0)/CRN  
 L15 1 S 443290-72-0  
 L16 3 S L12,L14,L15

FILE 'HCAPLUS' ENTERED AT 13:46:13 ON 06 AUG 2003

SET SMARTSELECT ON  
 L17 SEL L8 1- RN : 729 TERMS  
 SET SMARTSELECT OFF

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 SET SMARTSELECT ON  
 L19 SEL L18 1- RN : 729 TERMS  
 SET SMARTSELECT OFF  
 L20 729 S L19  
 L21 57 S L20 AND B/ELS  
 L22 21 S L21 AND C6-C6-C6/ES  
 L23 14 S L22 NOT L11  
 L24 10 S L23 NOT BOC30/ES  
 L25 7 S L24 AND 2/B  
 L26 5 S L25 NOT S/ELS  
 L27 7 S L26,L16 AND (C42H50B2N209 OR C36H38B2N206 OR C44H52B2N406 OR  
 L28 6 S L27 AND 1/NC  
 SEL RN  
 L29 1 S E80-E85/CRN  
 L30 7 S L16,L27,L28,L29  
 L31 1 S L26 NOT L30  
 SEL RN  
 L32 0 S E86/CRN  
 L33 19 S L11,L22 NOT L30  
 L34 15 S L33 AND B>=2  
 L35 4 S L33 NOT L34  
 L36 11 S L34 NOT PMS/CI  
 L37 9 S L36 NOT S/ELS  
 L38 6 S L34 NOT L37  
 L39 9 S L31,L37

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L40 0 S L30

L41 0 S L39

FILE 'USPATFULL, USPAT2' ENTERED AT 13:57:36 ON 06 AUG 2003

L42 4 S L30  
 L43 9 S L39  
 L44 9 S L42, L43  
 L45 4 S L44 AND (DANILOFF ? OR KALIVRETONOS ? OR NIKOLAITCHIK ?)/AU  
 L46 3 S L44 AND (SENSOR?(L)MED?(L)SCI?)/PA  
 L47 2 S L44 AND (PD<=20010221 OR PRD<=20010221)  
 L48 2 S L47 AND L44-L46  
 L49 7 S L44-L47 NOT L48

FILE 'HCAPLUS' ENTERED AT 13:59:17 ON 06 AUG 2003

L50 5 S L30  
 L51 7 S L39  
 L52 7 S L1-L4, L6-L8 AND L50, L51

FILE 'REGISTRY' ENTERED AT 14:00:12 ON 06 AUG 2003

FILE 'USPATFULL, USPAT2' ENTERED AT 14:00:49 ON 06 AUG 2003

FILE 'HCAPLUS' ENTERED AT 14:01:15 ON 06 AUG 2003

FILE 'REGISTRY' ENTERED AT 14:10:51 ON 06 AUG 2003

L53 STR  
 L54 SCR 1933  
 L55 50 S L53 AND L54 SAM

FILE 'REGISTRY' ENTERED AT 14:20:39 ON 06 AUG 2003

L56 29631 S 2508.17.56/RID  
     E C6-C6-C6/ES  
 L57 204 S L56, E3 AND B>=2  
 L58 113 S L57 AND (46.150.18 OR 46.156.30)/RID  
 L59 6 S L57 AND NC5/ES  
 L60 107 S L58 NOT L59  
 L61 103 S L60 AND NR>=5  
 L62 91 S L60 NOT L30, L39  
 L63 42 S L62 NOT (CCS OR PMS OR MNS)/CI  
 L64 12 S L63 AND (C42H50B2N204 OR C52H68B206 OR C58H64B2N406 OR C60H60  
     SEL RN 10 11 12  
 L65 3 S E1-E3  
 L66 30 S L63 NOT L64  
 L67 1 S L66 AND C32H42B204  
 L68 1380 S 46.150.18/RID AND C6-C6/ES AND B/ELS  
 L69 80 S 46.156.30/RID AND C6-C6/ES AND B/ELS  
 L70 170 S L68 AND 2/B  
 L71 43 S L70 AND N>=2  
 L72 20 S L71 NOT (PMS OR IDS OR MNS OR CCS)/CI  
 L73 4 S L65, L67  
     SEL RN  
 L74 10 S E4-E7/CRN

FILE 'HCAOLD' ENTERED AT 14:38:29 ON 06 AUG 2003

L75 0 S L73

FILE 'USPATFULL, USPAT2' ENTERED AT 14:38:33 ON 06 AUG 2003

L76 3 S L73

FILE 'HCAPLUS' ENTERED AT 14:38:42 ON 06 AUG 2003

L77 12 S L73  
 L78 11 S L77 AND (PD<=20010221 OR PRD<=20010221 OR AD<=20010221)  
 L79 0 S L77 AND L2-L4, L6  
 L80 12 S L77, L78

FILE 'REGISTRY' ENTERED AT 14:39:29 ON 06 AUG 2003

FILE 'USPATFULL, USPAT2' ENTERED AT 14:39:38 ON 06 AUG 2003

FILE 'HCAPLUS' ENTERED AT 14:39:50 ON 06 AUG 2003